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ABSTRACT

"Of Animals, Nature and People" is one of the "Preparing for Tomorrow's World" (PTW) program modules. PTW is an interdisciplinary, future-oriented program incorporating information from the sciences and social sciences and addressing societal concerns which interface science/technology/society. The program promotes responsible citizenry with increased abilities in critical thinking, problem-solving, social/ethical reasoning, and decision-making. The intent of this module is to develop in students (grades 10-11) the need to evolve an environmental ethic. Provided in the teaching guide are discussions of the socio-scientific reasoning model (theoretical basis of PTW), purpose of the module, strategies employed (focusing on the dilemma/debate discussion technique), module structure/objectives, and its use in the school curriculum. Also provided is a suggested teaching schedule, guidelines for conducting dilemma discussions (including basic steps in the process), a chart indicating moral issues (as defined by Kohlberg) presented in the 10 dilemmas, and suggested teaching strategies for the dilemmas (related to human behavior toward animals and the environment) and role-playing simulations on the use of natural resources. Additional reading material (in an appendix) and bibliography are included. The module may be used as a separate unit of study, mini-course, or incorporated into such subject areas as civics, language arts, or science. (JN)

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PREPARING FOR TOMORROW'S WORLD

Of Animals, Nature and People

Teacher's Guide

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Preparing for Tomorrow's World
An Interdisciplinary Curriculum Program

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PREPARING FOR TOMORROW'S WORLD

Of Animals, Nature and People

Teacher's Guide

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PREFACE

We live in an exciting, rapidly changing, and challenging world—a world highly dependent upon science and technology. Our world is changing so rapidly that we sometimes fail to recognize that much of what we today take for granted as common, everyday occurrences existed only in the imaginations of people just a few short years ago. Advances in science and technology have brought many dreams to fruition. Long before today's school children become senior citizens, much of today's "science fiction" will, in fact, become reality. Recall just a few accomplishments which not long ago were viewed as idle dreams:

- *New biomedical advances have made it possible to replace defective hearts, kidneys and other organs.*
- *The first air flight at Kitty Hawk lasted only a few seconds. Now, a little over half a century later space ships travel thousands of miles an hour to explore distant planets.*
- *Nuclear technology—of interest a few short years ago because of its destructive potential—could provide humankind with almost limitless supplies of energy for peace-time needs.*
- *Computer technology has made it possible to solve in seconds problems which only a decade ago would require many human lifetimes.*
- *Science and technology have brought us to the brink of controlling weather, earthquakes and other natural phenomena.*

Moreover, the changes which we have been experiencing and to which we have become accustomed are occurring at an increasingly rapid rate. Changes, most futurists forecast, will continue and, in fact, even accelerate as we move into the 21st Century and beyond. But, as Barry Commoner has stated, "There is no such thing as a free lunch." These great advances will not be achieved without a high price. We are now beginning to experience the adverse effects of our great achievements:

- *The world's natural resources are being rapidly depleted.*
- *Our planet's water and air are no longer pure and clean.*
- *Thousands of plant and animal species are threatened with extinction.*
- *Nearly half the world's population suffers from malnutrition.*

While science and technology have given us tremendous power, we are also confronted with an awesome responsibility: to use the power and ability wisely, to make equitable decision tradeoffs, and to make valid and just choices when there is no absolute "right" alternative. Whether we have used our new powers wisely is highly questionable.

Today's youth will soon become society's decision-makers. Will they be capable of improving upon the decision-making of the past? Will they possess the skills and abilities to make effective, equitable, long-range decisions to create a better world?

To the student:

This module has been prepared to help you—the student and future decision maker—function more effectively in a rapidly changing world. Other modules in the *Preparing for Tomorrow's World* program focus on additional issues of current and future importance.

To the teacher:

It is our belief that this module—and indeed the entire *Preparing for Tomorrow's World* program—will help you the teacher prepare the future decision-maker to deal effectively with issues and challenges at the interfaces of science/technology/society. It is our belief that the contents and activities in this program will begin to prepare today's youth to live life to the fullest, in balance with Earth's resources and environmental limits, and to meet the challenges of tomorrow's world.

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INTRODUCTION

> *Industrial man until recently has for the most part seen himself as separate from or outside of nature. From this inference he has frequently concluded that he may exploit nature with impunity and that where nature fails to meet his wants, science, through technology, will synthesize a substitute.*
>
> Lynton K. Caldwell
> Biopolitics: Science, Ethics and Public Policy
> *The Yale Review, 54*, pp. 1-16
> October 1964

We need not look afar to see the many examples of abuses humans have inflicted on the environment: polluted rivers and streams, hillsides denuded of trees, marshlands transformed into garbage dumps, lands gorged and laid barren by mining activities. Animals that once flourished in great numbers have been reduced to a handful, if not completely eliminated. For example, the "wholesale" killing of the North American bison, whose numbers were estimated between 50 and 75 million, are no more, save for the remaining few in protected sanctuaries and zoos.

Such abuses are beginning to create alarm, for the earth which once provided so bountifully no longer seems to hold that same capability. Fertile farmlands are now deserts. Fishermen no longer bring in a full catch. Forests, for which many people still depend upon for firewood, are shrinking at alarming rates. Air in many places is unfit to breathe. We begin to ask, "Why has this happened?" While our numbers have increased and our tools are capable of greater and more rapid destruction, the underlying problem, in part may be found in the way we view our environment.

Historian Lynn White (1967)[1] has offered the thesis that our attitude towards nature stems from our western religious belief — the belief that God created all the plants, animals, birds and fishes for humankind to rule over, existing for the benefit of humans. Human beings seen from this perspective are the center of the universe and command superiority over all of nature. Thus, through science and technology and pursuit of progress and worldly comforts, people have left behind an endless trail of destruction and abuse. As a result, our basic life support system is in jeopardy. To reverse this situation, according to Dr. White, will require changes in our attitude towards nature from one of dominance to one of partnership with nature, respecting the rights of all living things.

However, to change our ways may require more than change in attitude towards nature. As pointed out by Yi-Fu Tuan,[2] in many Eastern beliefs, such as Buddhism and Taoism, a person is viewed as one with nature and must conduct oneself in harmony with nature. While many activities in the Eastern world reflect this attitude (Roads are built, not in straight lines, but wind around the natural contours of the land, and structures are built to fit in harmony with the natural landscapes.), other activities have not left the land unscarred. Forests have been burned to lure dangerous animals out of their hiding places. Coal was needed as early as the 10th Century in China because the ceramic industry had so severely depleted the forests. Tuan, therefore, argues that attitudes towards nature do not necessarily lead to non-abusive behavior. We may need, in addition, to overcome our ignorance by improving our understanding of the natural system as well as learning to live in ways that produce less injury.

In effect, we may need to respond to Aldo Leopold's call for a "land ethic." An ethic which defines right and wrong, duties and obligations toward the greater earth/community. According to Leopold, humankind has evolved first a system of personal ethics that governed behavior between individuals and, somewhat later, societal ethics that governed behavior of individuals in the larger human community, embodying ideas of respect for other human beings and cooperation. The land ethic extends the notion of community to include the land — its soil, its waters, its plants and its animals. Land ethic requires a change in the concept of land as property.

> *When God-like Odysseus returned from the wars in Troy, he hanged all on one rope a dozen slave-girls of his household whom he suspected of misbehavior during his absence.*
>
> *This hanging involved no question of propriety. The girls were property. The disposal of property was then, as now, a matter of expediency, not of right and wrong.*
>
> *Concepts of right and wrong were not lacking from Odysseus' Greece: witness the fidelity of his wife through the long years before at last his black-prowed galleys clove the wine-dark seas for home. The ethical structure of that day covered wives, but had not yet been extended to human chattels. During the three thousand years which have since lapsed, ethical criteria have been extended to many fields of conduct, with corresponding shrinkages in those judged by expediency only.*[3]

Moreover, a land ethic changes a person's role from "conqueror of the land community to plain citizen and member of it."[4] Thus, the role of a member of the community requires respect for one's fellow member as well as the community at large because each is a contributing

element and has intrinsic worth. It embodies the knowledge that one is dependent on the other. Rules and practices take into account, not only benefit or profit to oneself, but benefit or profit to the community. The existence of the land community depends on its stability. If pastures are overgrazed, topsoil is swept away, plants can no longer grow, animals lose their food source and humans, too, suffer. Reverence and responsibility are also an integral and necessary part of the land ethic. It is the recognition of the unique processes of life and the obligation that all act responsibly to insure the continued existence of all life, and the belief that all life has the inherent right to sustain its place in nature. To develop a land ethic, we must proceed by examining our definitions of right and wrong in the context of the total community.

In this module, *Of Animals, Nature and People*, some of the issues surrounding human-animal and human-nature relationships will be explored. Many of the questions raised are ones that challenge conventional norms and practices: What does respect for land mean? Why is it important to respect animals and nature? How can we live in greater harmony with our total community? What are our obligations and responsibilities towards earth's future? In essence, the concept of humans as stewards rather than conquerors of the earthly community is tendered. The hope is that our students will develop an interest and concern about their stewardship role, progressing towards the goal of an environmental ethic. The future of a quality existence for all inhabitants of earth will rest upon our present and future decision makers. We see the urgency for incorporating a land or environmental ethic in our practices and behavior and broadening our knowledge about the interrelationships and interdependencies of the total global community. Hence, the issues included in this module offer opportunities for reflecting upon and to more critically examine our current values and attitudes regarding our environment.

[1]Lynn White. The roots of our ecological crisis. *Science, 155*, 1205-7, 1967.

[2]Yi-Fu Tuan. Our treatment of the environment in ideal and actuality. *American Scientist, 58*, No. 3, 244-249, 1970.

[3]Aldo Leopold. The land ethic. *A Sand County Almanac*, Ballantine Books, New York, 1966, p. 237.

[4]*Ibid.*, p. 240.

The Theoretical Basis of *Preparing for Tomorrow's World:*

The Socio-Scientific Reasoning Model

As pointed out in the Introduction to this guide, developments in science and technology are not without societal issues and problems. New developments and applications will inevitably bring about new issues as well as increase their complexity. Unlike scientific problems, socio-scientific problems often have no "correct" answer because they involve human choices and decisions. Such choices and decisions are value ladened. The particular decisions made today and tomorrow will determine the course of the future. Hence, we are faced with the profound challenge to make just and wise decisions in order to create a better future world. To help prepare our students to become more effective problem solvers and decision makers, education will need to focus on the simultaneous development of the following skills:

- Ability to deal with problems containing multiple interacting variables
- Decision making that incorporates a wider social perspective
- Critical thinking in the evaluation of consequences and implications

Components of the Socio-Scientific Reasoning Model

In response to the above concern and recognizing the importance of this mode of development, we developed the "socio-scientific reasoning" model to serve as a framework in the production of our curriculum materials. This model combines our own philosophy, ideas and research with the theories and philosophies of Piaget, Dewey, Kohlberg and Selman. Basic to these theories is the idea of education as helping an individual grow both intellectually and morally. Therefore, this socio-scientific reasoning model approaches education from a developmental perspective. This model incorporates the ideas of stage development from the perspective of cognition, moral ethical reasoning and social role taking. The basic tenets of these theories are briefly summarized below.

Logical Reasoning

Jean Piaget, the noted Swiss psychologist, has made important contributions in the area of cognitive development which are pertinent to our efforts[1,2]. Piaget views the development of logical reasoning as progression through the series of stepwise stages indicated in Table I (sensori-motor, preoperational, concrete operational and formal operational). At each successive stage the logical reasoning ability of individuals takes on a broader perspective and incorporates the ability to deal with greater numbers of interacting variables of increasing intellectual complexity. Each stage of thinking builds upon the previous one, but takes on a new structural form. Growth in cognition, it seems, can be facilitated and nurtured through appropriate educational experiences.

In explaining growth in logical reasoning capability, Piaget refers to the processes of assimilation, accommodation, and equilibration. Assimilation occurs when the child incorporates new ideas and situations into his or her existing thought structures. On the other hand, the child also encounters objects and events that do not fit into his or her existing thought structures. In these contradictory situations, the child has essentially two options: he she must either enlarge his/her existing structures or create a new category or structure. Piaget defines this as the process of accommodation.

Intellectual growth, Piaget postulates, occurs when the individual attempts to resolve the tension between the interactive processes of assimilation and accommodation by developing new thoughts and responses that are more suitable or adequate. Equilibrium is re-established when thought structures are altered, producing new accommodations that enable the individual to assimilate the new situations. Intellectual growth, then, occurs through internal self-regulation processes that lead to new, higher levels of equilibration.

Moral/Ethical Reasoning

While there are several approaches to values education, the more encompassing one is the cognitive developmental approach offered by Lawrence Kohlberg[3,4]. Kohlberg's ideas are derived from the philosophic positions of Dewey and and Piaget. The emphasis here is to help individuals grow intellectually and morally. This is, we feel, a more functional approach than arbitrary indoctrination of values as used in "character" or "socialization" education or taking a "values relativity" stance, typically employed in the more common values clarification approach.

Kohlberg's moral/ethical development theory is an extension of Piaget's cognitive development theory. Similarly to Piaget, Kohlberg views moral development from childhood to adulthood as progression through a series of stages (Table 2). Each stage is characterized by a very different way of perceiving and interpreting one's experiences. At Kohlberg's Stage 2, for example, "right" and "wrong" are judged in terms of satisfying one's own needs and sometimes the needs of others if it is convenient to do so. Stage 3 type of reasoning centers around maintenance of approval in one's own social group. The orientation is towards conformity to group expectation. At the higher principled stages, reasoning takes into account concerns for the welfare of others in a broader context, and includes concerns for human dignity, liberty, justice, and equality—those very same principles upon which our Constitution is based.

Following Piaget, Kolhberg views development not as mere accumulation of information, but changes in thinking capabilities—the structures of thought processes. In the course of development, higher-level thought structures are attained and result in the extension of an individual's social perspective and reasoning capabilities. Applying higher levels of thinking to problems results in problem solutions that have greater consistency and are more generalizable. See Appendix detailing the stages of development.

Social Role-Taking Stages

The research of Robert Selman[5] indicates that social role taking ability is a developed capacity which also progresses in a series of stages from early childhood through adolescence. Role taking is viewed by Selman in terms of qualitative

changes in the manner a child structures his/her understanding of the relationship between the perspectives of self and others.

Using the open-ended clinical method of inquiry first applied by Piaget and then later by Kohlberg, Selman has identified and defined Stages 0 through 4 (age range is approximately 3 years to 15+ years). These stages are referred to as: Ego-centric Viewpoint (Stage 0), Social-Informational Role Taking (Stage 1), Self Reflection Role Taking (Stage 2), Mutual Role Taking (Stage 3), and Social and Conventional System Role Taking (Stage 4). Descriptions of the role taking stages appear in Table 3. Each of Selman's role taking stages relates closely to and parallels Kohlberg's moral reasoning stages.

Selman views the social role taking stages as a link between Piaget's logical reasoning stages and Kohlberg's moral reasoning stages. Just as Piaget's logical reasoning stages are necessary but not sufficient for attaining the parallel moral reasoning stages, a similarly necessary but not sufficient relationship appears to exist between the social role taking stages and parallel moral reasoning stages.

As Selman has pointed out, ". . .the child's cognitive stage indicates his level of understanding of physical and logical problems, while his role taking stage indicates his level of understanding of the nature of social relations, and his moral judgment stage indicates the manner in which he decides how to resolve social conflicts between people with different points of view".

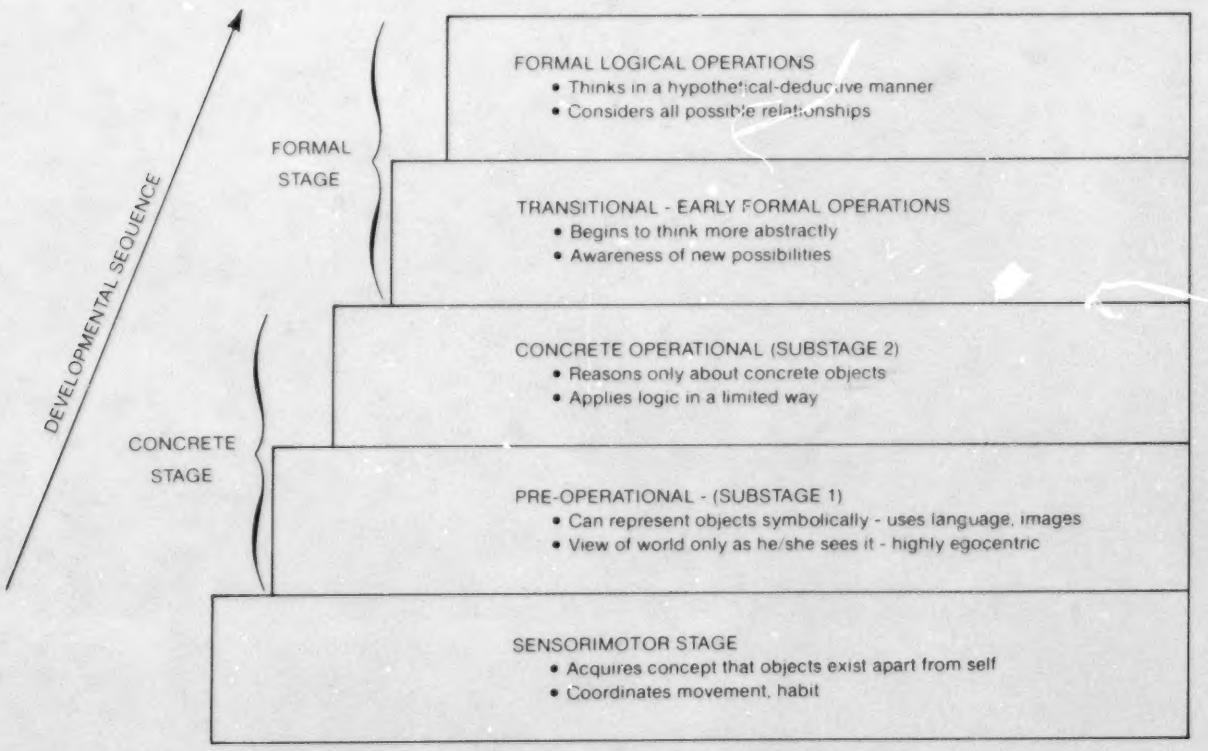
The Socio-Scientific Reasoning Model

Combining our own philosophy, ideas, and research with the theories of Piaget, Kohlberg and Selman, the socio-scientific reasoning model has been developed. Socio-scientific reasoning, as defined here, is the incorporation of the hypothetico-deductive mode of problem solving with the social and moral/ethical concerns of decision making. This model has served as a guide in the development of educational materials to help students advance to higher levels of thinking and reasoning capabilities. Moreover, it is highly flexible and readily adaptable to other classroom activities.

The basic assumption of this model is that effective problem solving requires simultaneous development in the realms of logical reasoning, social role taking, and moral/ethical reasoning. Purely objective scientific thinking cannot be applied in the resolution of most of the probable future conflicts without regard to the impact of those decisions on human needs and human goals. A technological solution, for example, may be, after critical analysis, feasible and logically consistent. From a societal perspective, however, one must question whether or not it should be applied. How to best prioritize our needs and evaluate trade-offs with a concern for the needs of future generations involves logical reasoning and critical thinking, but now with an added dimension . . . a social moral/ethical reasoning dimension.

Hence, the Socio-Scientific model consists of four interacting components (see Figure 1): (1) logical reasoning develop-

TABLE 1
PIAGET'S STAGES OF COGNITIVE DEVELOPMENT


DEVELOPMENTAL SEQUENCE
FORMAL STAGE
CONCRETE STAGE
FORMAL LOGICAL OPERATIONS
• Thinks in a hypothetical-deductive manner
• Considers all possible relationships
TRANSITIONAL - EARLY FORMAL OPERATIONS
• Begins to think more abstractly
• Awareness of new possibilities
CONCRETE OPERATIONAL (SUBSTAGE 2)
• Reasons only about concrete objects
• Applies logic in a limited way
PRE-OPERATIONAL - (SUBSTAGE 1)
• Can represent objects symbolically - uses language, images
• View of world only as he/she sees it - highly egocentric
SENSORIMOTOR STAGE
• Acquires concept that objects exist apart from self
• Coordinates movement, habit

ment is based on the theories of Piaget, while (2) moral/ethical reasoning relies strongly on Kohlberg's ideas. Selman's research provides the basis for the third component, the social role taking aspects of our model. Since the content or information componeat of the problem (component four) will vary, so too will the concepts vary accordingly. For example, in our applications of this model we have concentrated on issues at the interfaces of science, technology, and society. Of course, problem issues could also deal with or focus on any other topic one chooses to investigate.

The content component also consists of three interacting subunits. These subunits—science, technology, and society—rely on each other for their very existence. While each of the subunits is dependent upon the others, their individual underlying value structures create a high potential for discord since the concerns of one subunit often conflict with those of the

TABLE 2
KOHLBERG'S STAGES OF MORAL DEVELOPMENT

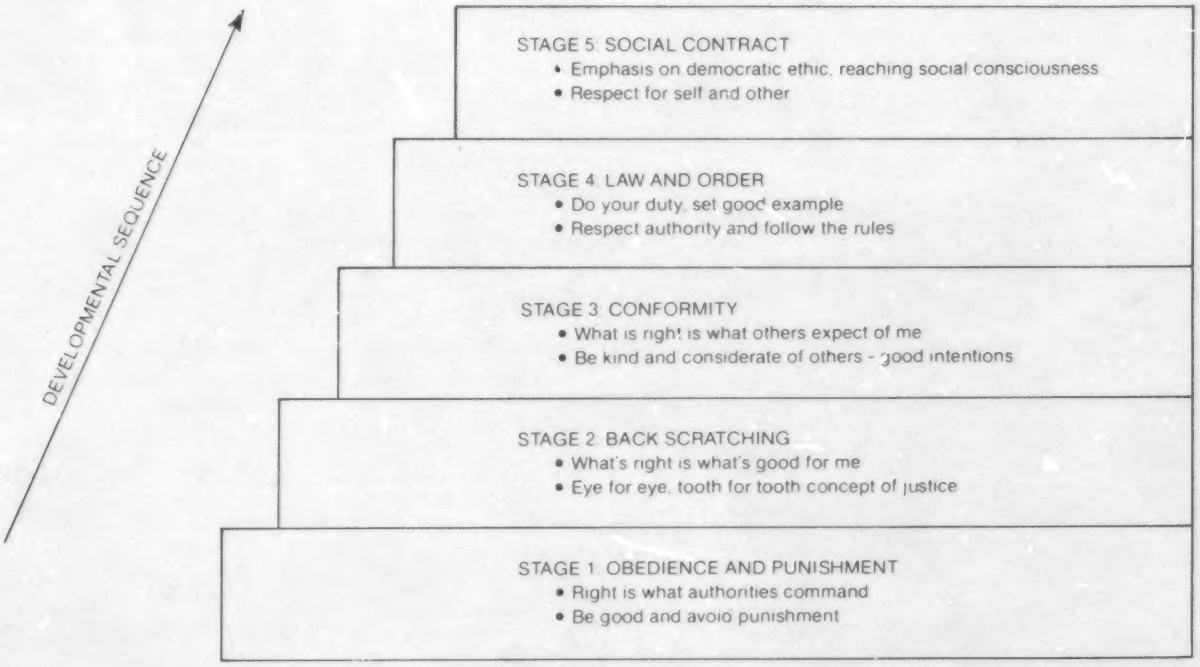

DEVELOPMENTAL SEQUENCE
STAGE 5: SOCIAL CONTRACT
• Emphasis on democratic ethic, reaching social consciousness
• Respect for self and other
STAGE 4: LAW AND ORDER
• Do your duty, set good example
• Respect authority and follow the rules
STAGE 3: CONFORMITY
• What is right is what others expect of me
• Be kind and considerate of others - good intentions
STAGE 2: BACK SCRATCHING
• What's right is what's good for me
• Eye for eye, tooth for tooth concept of justice
STAGE 1: OBEDIENCE AND PUNISHMENT
• Right is what authorities command
• Be good and avoid punishment

TABLE 3
SELMAN'S ROLE-TAKING STAGES

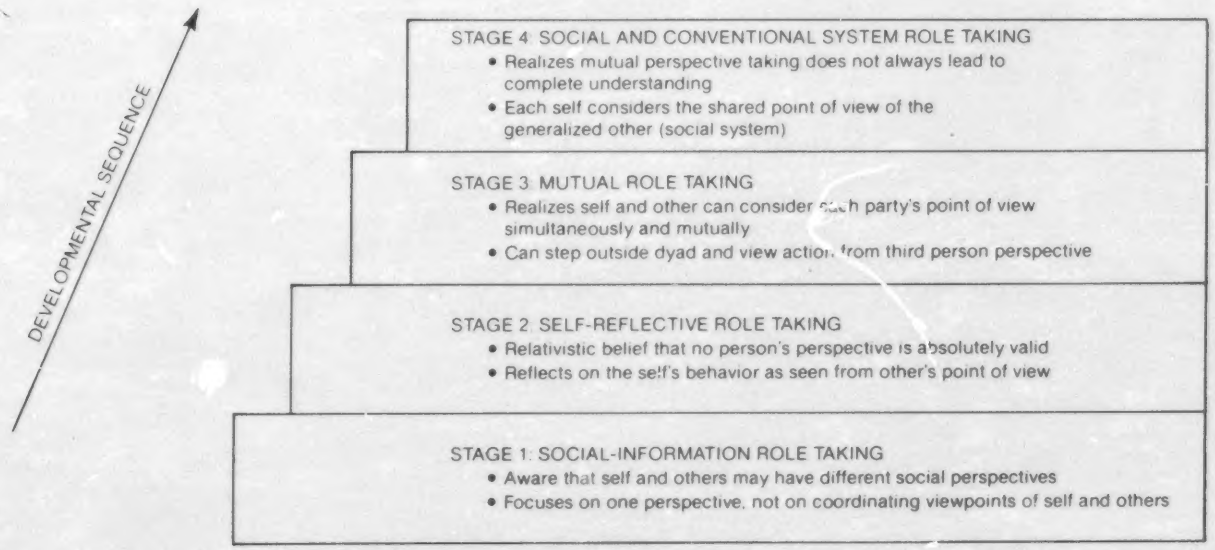
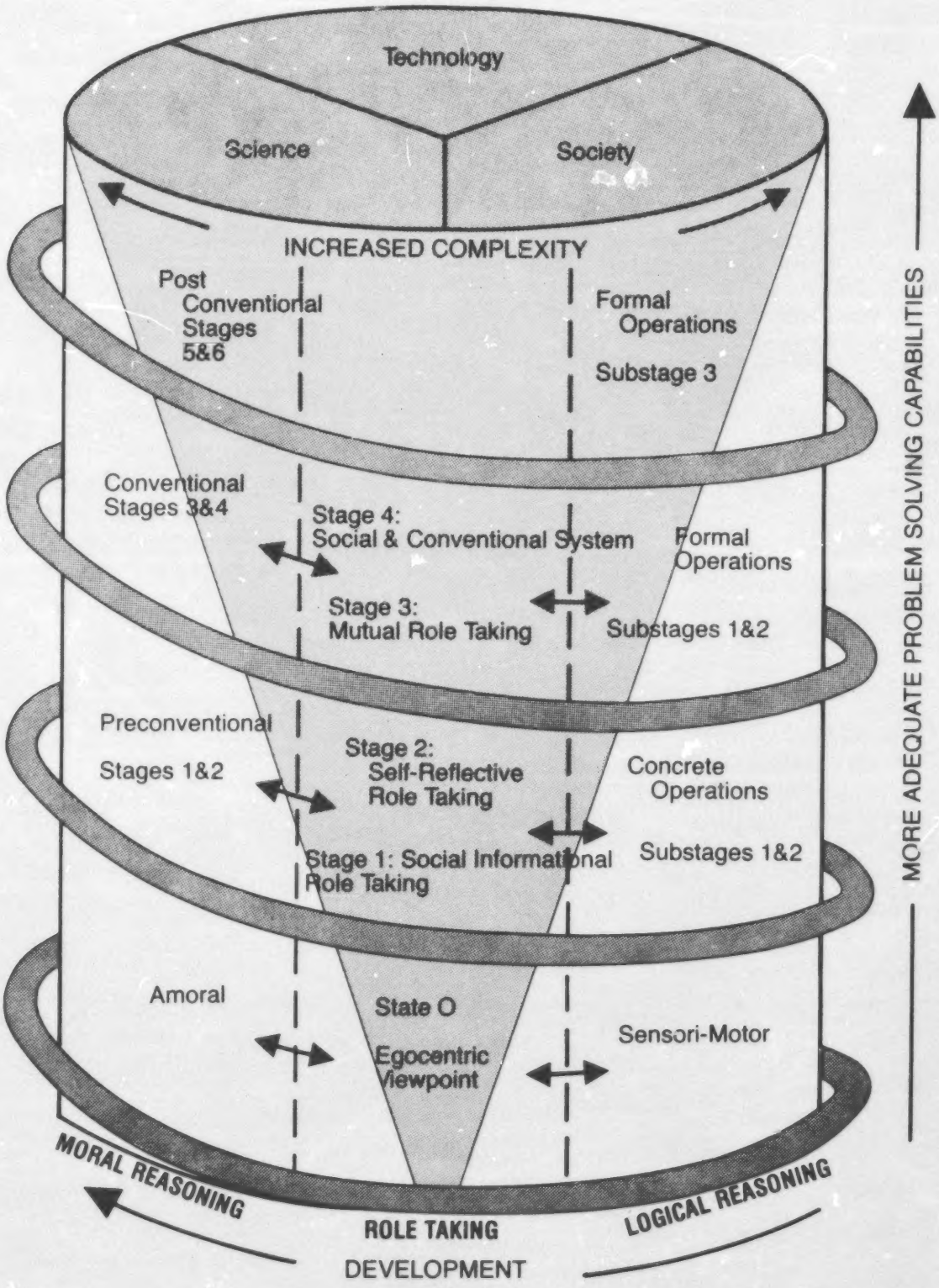

DEVELOPMENTAL SEQUENCE
STAGE 4: SOCIAL AND CONVENTIONAL SYSTEM ROLE TAKING
• Realizes mutual perspective taking does not always lead to complete understanding
• Each self considers the shared point of view of the generalized other (social system)
STAGE 3: MUTUAL ROLE TAKING
• Realizes self and other can consider each party's point of view simultaneously and mutually
• Can step outside dyad and view action from third person perspective
STAGE 2: SELF-REFLECTIVE ROLE TAKING
• Relativistic belief that no person's perspective is absolutely valid
• Reflects on the self's behavior as seen from other's point of view
STAGE 1: SOCIAL-INFORMATION ROLE TAKING
• Aware that self and others may have different social perspectives
• Focuses on one perspective, not on coordinating viewpoints of self and others

FIGURE 1

THE SOCIO-SCIENTIFIC REASONING MODEL



others. This paradox—dependence and simultaneous conflict among the subunits—presents a unique opportunity and context for curriculum developers employing the Socio-Scientific Reasoning model to prepare educational materials.

Each component of this model is not seen as a totally separate and distinct entity. Rather, each of the four components interacts with and has an effect on all other components. Thus, logical reasoning has an effect on, and in turn is affected by, social role taking development. In a similar manner, social role taking has an effect on, and is affected by, developments in the moral/ethical realm. Of course, logical reasoning and moral/ethical reasoning also interact. Each of these major components—logical reasoning, social role taking, and moral/ethical reasoning—interact not only with each other but with the fourth component, content or information.

Referring to Figure 1 again, the content cone is small at the low end because at earlier stages of development the number of concepts entertained are smaller and the concepts are simple in nature. Hence, as the cone broadens so too does the complexity of content or information included. Individuals at stages of development intersecting the lower end of the cone can deal with issues and concepts of a simpler form while, on the other hand, individuals at the upper end with higher levels of maturity have the capacity for dealing with more issues and issues of greater complexity. Development, then, is both vertical and horizontal: vertical development is from lower to higher stages; horizontal development relates to the "necessary but not sufficient" requirements which must be satisfied as one moves from logical reasoning, through social role taking, to moral reasoning capabilities.

Thus, while each stage reflects a distinctly unique capability for problem solving in a science/technology/society context, we view development or progress as a continuously spiraling process. In this process, however, there are leaps and quiesence, and fixation at any stage is possible. Levels of logical reasoning, moral reasoning, and role taking maturity also seem to vary, we find, depending on the issues addressed. These apparent inconsistencies in reasoning—even when dealing with the same or similar mental and moral constructs—seem to be related to the degree of emotionality, familiarity with, interest in, and/or knowledge about the issues under consideration[7].

The goal then is to help each individual "spiral" upwards through the Socio-Scientific Reasoning cone and synchronously achieve "more adequate" problem solving capability. "More adequate" as used here refers to the idea that when applied to problem solving, the higher stages of reasoning result in solutions that are more encompassing and generalizable; they enable students to deal with greater complexity.

Application of the Socio-Scientific Reasoning Model in the Classroom

The Socio-Scientific Reasoning model therefore serves as the basis for identifying the types of learning experience and the sophistication level of those experiences important to help students develop. It recognizes that learning capabilities differ with age, grade level, interest and learning needs. Implicit in the model and in accord with stage theory is the idea that at each stage there is a characteristic form of thinking capability which determines how experiences and information are interpreted and acted upon.

The main strategy underlying all of these activities is based on Piaget's concept of equilibration. It is only when disequilibrium is created that active restructuring of thought takes place. This active restructuring leads to growth in logical reasoning, in social role taking, and in moral/ethical reasoning capabilities as well.

Restructuring of existing cognitive structures occurs when internal disequilibrium is felt by the individual. New experiences and inputs which are not readily comprehensible to the individual challenge his/her existing mode of thought by revealing inadequacies or inconsistencies in that problem solving strategy[8]. Arrestment at a given stage is partially explained by the developmental theorists as the lack of opportunities that create conflict or dissonance which place the individual in a position where he/she needs to assess his/her particular mode of thinking. Perhaps, as Clive Beck points out, the reason why people do not develop morally is because they have not had the opportunity to entertain alternatives—their imaginations have not been extended[9]. We, in addition, contend that the reason people do not advance in logical reasoning can also be attributed, to a large degree, to a similar lack of opportunities.

We have identified some of the basic elements needed to provide experiential opportunities that promote development of problem solving and decision making skills. A partial listing includes providing opportunities for students to:

- Encounter a variety of viewpoints
- Experience higher level reasoning
- Take the perspective of others
- Examine and clarify one's own ideas
- Examine the consequences and implications of one's decisions
- Defend one's position
- Evaluate possible alternatives
- Consider and recognize the role of the self to society
- Reflect on one's own value system
- Test own ideas and those of others

One educational activity which incorporates some of these elements is the classroom dilemma discussion, an activity most commonly associated with Lawrence Kohlberg and his colleagues. We have, however, modified and extended this approach to more systematically encompass critical analysis and evaluation of information and data. We have also employed such other formats as role taking, simulations, and futures forecasting and analysis methodologies.

For example, reasoning at a particular stage is not a value judgment of whether an act is good or bad, but is the pattern of the concepts entertained in judging the "ought" of rights, duties and obligations of human relationships. Younger children at lower stages reason about duties in terms of reciprocal benefits from the party—"If you do me a favor, I will do you a favor." Whereas in principled reasoning, duty is what an individual has become morally committed to do and is self-chosen. Higher stage reasoning is therefore the ability to apply value concerns (Kohlberg's major concerns include self welfare, welfare of others, sense of duty and of motives, conscience, rules, punitive justice, role taking) in a more

internalized, complex, autonomous, critical, consistent and generalized manner.

Effective discussion, however, cannot take place in a vacuum. Needed also is an information base or context from which students can begin to analyze and evaluate information. With information which they have extracted and synthesized, additional ideas and rational arguments can be developed for discussion. For curriculum activities, we have created problem situations in a variety of contexts which, according to scholars in a variety of fields, will be prominent in the next quarter century and beyond[10]. This adds another perspective to the dilemma problem — that which elicits scientific logical reasoning in addition to moral/ethical reasoning — but in a futuristic context.

These serve as mechanisms for students to put some of the ideas and judgments that have emanated from the discussion into larger structural frameworks. They also provide students with opportunities to project into the future, to think beyond their own immediate experiences, and to consider the impact of different decisions on future society.

[1] Jean Piaget. Piaget's theory. In Thomas Lickona (Ed.) *Charmichael's manual of child psychology*. New York: John Wiley and Sons, 1970.

[2] Howard E. Gruber and J.J. Vonèche. *The essential Piaget*. New York: Basic Books, Inc., 1979.

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[4] John Gibbs, L. Kohlberg, A Colby and B. Speicher-Duban. The domain and development of moral judgment. In John R. Meyer (Ed.) *Reflections on values education*. Waterloo, Ontairo, Canada: Wilfred Lawrier University Press, 1976.

[5] Robert Selman. Social-cognitive understanding: a guide to educational and clinical practice. In Thomas Lickona (Ed.) *Moral development and behavior: theory, research, and social issues*. New York: Holt, Rinehardt and Winston, 1976.

[6] Ibid. pg. 307.

[7] Louis A. Iozzi. *Moral judgment, verbal ability, logical resoning ability and environmental issues*. Doctoral Dissertation, Rutgers-the State University of New Jersey, 1976.

[8] Carol Tomlinson-Keasey and Clark B. Keasey. The mediating role of cogaitive development in moral judgment. *Child Development*, 1974, *45*, 291-298.

[9] Clive M. Beck. *Ethics*. Toronto: McGraw-Hill, 1972.

[10] Harold G. Shane. *Curriculum change toward the 21st century*. Washington, D.C.: National Education Association, 1977.

Overview Of *OF ANIMALS, NATURE AND PEOPLE*

Purpose

The need to evolve an environmental ethic is forwarded in the Introduction of this guide. To help develop in our students an awareness of this need is therefore the intent of this module. Examples of how our self-serving, "here and now," short term perspective and activities have led to irreparable destruction and our various efforts to control and dominate nature are presented. The hope is to engage students to raise questions about our proper role on planet earth. Many of our actions are brought about by ignorance, others by our limited vision. By examining our activities with a more critical and knowledgeable eye, our students can perhaps expand their perspective, recognizing that the quality of life on earth and its survival is dependent on the choices and decisions we make.

While there is no generally agreed upon definition of environmental ethics, even among the prominent writers on the subject, it remains essential that the concept of a more encompassing level of duties and responsibilities be entertained. Some of the ideas forwarded by scholars, writers and scientists include the following:

- Naturalist **Charles Darwin** viewed the environment as a fragile and complex interaction of species. Disturbance of this sensitive system disrupts the natural selection process.
- **John Muir,** a leading wilderness advocate in the late 19th century, wrote, "In God's wilderness lies the hope of the world — the great fresh, unblighted, unredeemed wilderness. The galling harness of civilization drops off and the wounds heal ere we are aware."
- **Aldo Leopold,** the "father" of professional wildlife management, argued that proper and wise land use must not be governed by economic self-interest but by individual responsibility towards the health of the land-earth, health being the capacity for self renewal. "A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise." . . . "We are remodeling the Alhambra with a steam shovel, and we are proud of our yardage which after all has many good points, but we are in need of gentler and more objective criteria for its successful use."
- **Fairfield Osburn** in *Our Plundered Planet* wrote, "Man must recognize the necessity of cooperating with nature. He must temper his demands and use and conserve the natural living resources of this earth in a manner that can alone provide for the continuation of his civilization."
- **R. Buckminster Fuller** calls for synergistic behavior: "We are not going to be able to operate our spaceship earth successfully nor for much longer unless we see it as a whole spaceship and our fate as common. It has to be everybody or nobody . . . We are going to have to find ways of organizing ourselves cooperatively, sanely, scientifically, harmoniously and in regenerative spontaneity with the rest of humanity."
- **Rachel Carson,** who drew our attention to the devastating effects of pesticides in *Silent Spring,* warned that unless we learn to use our technology more prudently we would imperil all life, including ourselves.
- **Ian McHarg,** the environmental architect, proposes new perspectives. "We must see nature as a process within which man exists, splendidly equipped to become the manager of the biosphere; and give form to that symbiosis which is his greatest role, man the world's steward."
- The ecologically ethical approach advocated by **Rene Dubos,** noted French microbiologist and writer, is one of creative stewardship — that humans' ingenuity interacting with nature can improve upon it. "While the living earth still nurtures and shapes man, he now possesses the power to change it and to determine its fate, thereby determining his own fate. . ."
- **E.F. Schumacher,** who wrote *Small is Beautiful,* sees the problem of environmental deterioration, not as a technical problem, but as a problem of our modern lifestyle. To reverse our current destructive courses requires changes in our basic beliefs and aspirations. "Everything points to the fact that what is most needed today is a revision of the ends which all our efforts are meant to serve. And this implies that above all else we need the development of a lifestyle which accords to material their proper legitimate place, which is secondary and not primary."
- A somewhat different perspective is that proposed by **Newell Mack,** a MIT researcher, who believes that we must consider the impact of our decisions on future generation — intergeneration obligations. "Should the needs of distant generations weigh in one's choices? . . . One motivation we have for considering the future effects of our actions is *our* concern for 'grandchildren' many generations hence. A different motivation might be to regard them as having some sort of claim to the earth they will inherit . . . In short, do grandchildren have rights?"
- Political scientist, **John Rodman,** sees possible conflict between the current viewpoints emerging from the environmental movement. On the one hand, the "Enlightened Egoists" claim that it is useful and necessary to save an endangered species in order for the human species or human civilization to survive. On the other hand, "Natural Moralists" insist that it is our duty to save a species because it has a right to exist. The two viewpoints can produce divergent goals such as in the disagreements between preservationists and conservationists. He urges the recognition of a more comprehensive dimension termed "Ecological Sensibility." "Ecological Sensibility involves an awareness that the individual self and the politically organized society, as well as the biosphere, are ecologically, structurally composed of diverse elements interacting to maintain what is normally a relatively steady state condition."

The above ideas and concepts thus offer a possible context from which to examine the issues and topics presented in this module. What is environmentally ethical and how to act in an environmentally ethical manner is the challenge that the student will need to confront and resolve.

Strategy

Although the issues and concepts of this module tend to be of an abstract, philosophical nature, how we live and behave fall in the realm of the concrete. Thus, to

address concerns about our relationship with our environment, we have used a heightened case history approach to stimulate students to think about and discuss problems surrounding those issues. Using intensified problem situations, students can more readily identify the issues in conflict and therefore engage in the debate. Beginning from a seemingly simplified question, more complex issues will emerge as the questions are pursued in greater depth and when alternative ideas/positions are introduced. In this manner, higher order, more sophisticated concepts evolve as students actively participate in the discourse and the process of "thinking through a problem." Each student, starting from an apparently straightforward, simple conflict, should thus be able to grasp the problem and investigate it at the level of complexity consistent with his/her mental sophistication.

The dilemma discussion/debate constitutes a dominant activity in this module. It has been shown to be a highly effective vehicle to focus on issues and to challenge students to become involved participants. Some of the dilemmas are adopted from actual case histories, while others, although hypothetical, reflect critical choices being made today or will need resolution in the foreseeable future. The role play and simulation activities are variations of this basic format. However, role play offers an additional dimension — that which requires the student to step from his/her perspective and adopt the perspective of another. It involves the process of decentration, an important process in the development of higher level reasoning. Both types of activities require students to think about their own thinking and thinking of others.

The rationale for these activities can be briefly summarized as follows:

- The highly controversial problem situation quickly generates differences of opinion among students.
- Students become actively engaged in the dialogue.
- Students are exposed to alternative ideas or positions so that they must frequently re-examine their own positions.
- Students learn to support their position in a well thought out and logical manner.

During the course of discussion, students will experience ethical or value conflict. When the implications and consequences of certain decisions are examined, the outcome may in fact be in opposition to what the student originally thought to be desirable. It is through the process of experiencing conflict that students develop new ways of thinking about problems and their solutions. Also, students may find arguments presented by their peers more relevant to them than those they read or hear from adult authority. Although it may seem that students learn less factual information from discussion than from lectures or readings, the discussion process places a personal demand on students to synthesize, organize, and interrelate information and concepts. In this way, they are, in fact, developing higher level skills that, unlike recall of factual material, do not readily decay with time.

While the dilemma situations involve idividuals, we have constructed them to reflect decisions having effects at the personal, community, national and global levels. Hence, students can begin to extend their scope of thinking when they consider a variety of perspectives. In view of developmental research findings that place senior high school students at Piaget's transition stage to formal logical reasoning, many of the dilemmas require that students consider the social implications of decisions beyond their own social sphere to those which reflect more global concerns. The intention is to move students from egocentric thinking to thinking more broadly.

As mentioned previously, the dilemmas, as presented, are simple in form. Through in-depth discussion they grow in complexity. This is where skillful interjection of questions is so important. Your role as teacher/facilitator becomes critical because your insights and experience help to stimulate students to think about new ideas and gain new perspectives on the issue. The way in which students explore the dilemmas will, of course, depend upon their intellectual and conceptual level as well as their interest and curiosity. Also, the subject area in which the module is taught will influence ways in which concepts may be further developed — such as concepts from sociology, economics, ecology, civics, philosophy, history, etc. Drawing relationships from what is learned in the course will inevitably make students' learning more meaningful and effective.

In addition, we believe that understanding problems/issues and formulating one's own ideas requires a knowledge base as well as a sense of personal involvement. Introductory information is provided through articles and commentaries. Additional knowledge is acquired as students begin to think about and discuss ideas in the several types of activities and decision making opportunities. For the most part, opposing sides of the issues are included in order that students can reflect upon and question the wisdom of a given choice or action. Some of the readings may appear to be rather lengthy. They are included to serve more as reference material offering a variety of ideas for students to develop their own arguments or opinions. Students may wish to skim an article first and then refer back to it as needed during the course of the discussion or activity.

The strategies employed in this module are therefore designed to provide experiences that challenge students' existing mode of thinking and lead them to develop higher order mental structures. Many of these experiences are gained through dynamic dialogue with other classmates. Several activities place students in adversary positions or in role positions that do not reflect their personal perspectives. Opportunities are thus created for students to constructively argue with one another and with themselves.

If students have had few experiences with the open-ended discussions and activities characteristic of this module, they may experience some degree of uneasiness and hesitate to express their opinions. They will pursue you for the "correct answers, where in fact there are no quick, easy solutions. It becomes all the more important that you hold firm to a neutral stance. Once students recognize your role as a dispassionate observer, they will quickly resort to their own resources and begin to make decisions on their own. This situation has been verified time and time again by teachers who field tested these materials. They find that students are willing and anxious to express their ideas and opinions once they realize that they can do so in a nonjudgmental atmosphere. The structure of the small group discussion and group planning exercises facilitates student dialogue and in addition provide a supportive environment for students more reticient to speak up in larger group settings.

Of Animals, Nature and People in the School Curriculum

This module, designed for the senior high school level (grades 11 and 12), can be infused into a number of subject area courses: science, psychology, history, philosophy, language arts, civics, etc. The types of issues and concepts emphasized will depend upon the course and its focus. For example, in a science class greater emphasis may be placed on investigating ecological concepts. In a history or civics class greater emphasis may be placed on concepts related to law and the rights and duties of citizens.

The module format permits a high degree of flexibility. The dilemma discussion, debate and simulations can be selectively used in any order as extension activities to ongoing topics of study. Alternatively, the module may serve as the basis of a study unit or mini course. The optimal use of this module will depend upon your needs and interests and those of your students. However, the concepts and issues in these materials become more meaningful and pertinent when relationships are drawn between these efforts and ongoing class studies. By continually relating topics studied in class to the issues of this module, the significance and importance of the concerns conveyed here can be better appreciated. Moreover, students and teachers have found, in using these materials, that the dilemma discussions and other activities often suggest alternative dilemmas or additional activities. So often it is the case that many of the best dilemmas are developed spontaneously during the course of study. Having employed dilemma discussion and recognizing the value of this type of discussion, one begins to recognize a vast array of other problematic situations that will stimulate lively discussion.

Objectives of the Module

- To increase students' knowledge about issues concerning the relationship between people and the environment.
- To increase students' ability to analyze issues arising from the interaction between people and the natural environment.
- To promote the development of socio-scientific reasoning.
- To increase students' skills in decision-making.
- To develop students' awareness of their role in the world community.
- To provide opportunities for students to examine their environmental values.
- To introduce students to concepts related to environmental ethics.
- To increase students' ability to recognize the impact and consequences of different types of decisions.
- To increase students' ability to develop and present effective arguments in a logical, comprehensive manner.
- To increase students' ability to communicate and participate more effectively in classroom discussions.

Components of Of Animals, Nature and People

Student's Textbook

Teacher's Guide

Student Handouts - 2

Of Animals, Nature and People is divided into two sections. Section I, *Life on Earth,* contains a series of dilemma discussion activities. These dilemmas raise issues regarding human behavior towards animals and the natural environment and provide the focus for class discussion. Some of the issues address concepts less frequently entertained in every day conversation such as the rights of the environment, while other reflect age-old environmental concerns such as the use of natural resources and resource depletion. Questions that emerge from this section address concerns such as "What is proper action and behavior?" and "What are our duties and responsibilities?" These are questions of a moral/ethical nature, many of which are becoming increasingly major concerns as we face problems of diminishing resources and the rapidly increasing rates of environmental deterioration.

The dilemma story heightens the issues in conflict, highlighting the moral/ethical aspects of the conflict. Each dilemma situation involves a critical decision to be made by the central role character. Students are to decide what the central role character should do and supply reasons for taking a particular action. While the decision choice is to be made by an individual, the ramifications of that decision at the community, national and global level are explored.

Background readings precede each dilemma and provide some basic information surrounding the controversy. Differing viewpoints are included so that students can gain a greater understanding about the points of contention. Moreover, they offer ideas to initiate the discussion and can serve as preliminary arguments that students enlarge upon in their discussion. Some of the

readings may give greater emphasis to one viewpoint over the other. This is because the alternative viewpoints tend to be more frequently espoused and, we believe, need not be reiterated here.

Following each dilemma is a series of probe questions to help stimulate discussion as well as to bring out other aspects and implications of the situation. The questions are not sequentially ordered and may be used wherever most appropriate in the course of discussion.

Each of the dilemma stories raise two or more moral issues. Table 4 identifies the issues emphasized in each of the dilemmas. Become familiar with the issues so that you can anticipate questions to pose to students, Provocative questions will enhance the quality of the discussion as well as help stimulate thinking. Because dilemmas have no easy solutions, it is a natural tendency for students to avoid the difficult issues and focus on other aspects of the story. Your familiarity with the issues and prepared repertoire of possible probe questions will assist students in addressing the critical issues of the dilemma.

Section II — *Resources and Choices* — contains two role play simulations. Part I of the first simulation, *The Case of Mineral King,* which simulates an actual case that took place in the late 1960's, illustrates an issue that has grown in prominence in the past decades and may become increasingly controversial. The issue in question concerns the most appropriate use of our national and state parks: should they be developed or left undeveloped? Should they be made more accessible to the public-at-large? What are the consequences of commercializing the parks? With increasing numbers of park visitors, should there be limits placed on the number of visitors? Will some areas of special interest or unused beauty need to be kept off limits in order to protect them from harm or destruction? These and other related questions will be examined as students develop arguments in support of the position they represent. Part II, *Voices of Trees and Rivers,* is a courtroom trial based on a case in which students will select and focus on the question of "rights" of inanimate objects.

In the *Law of the Sea Conference* simulation, students will address issues facing the world community on the use of the oceans. The complexity of the issues and the many divergent perspectives will become apparent as students proceed to develop a set of laws acceptable to all nations. In this simulation students practice the art of negotiation and the process of reaching consensus.

The simulation-role play format offers students opportunities to place themselves in positions that, in most cases, are different from their own. They must, therefore, try to reflect the perspective of the role characters they represent and consider ideas foreign to their way of thinking. Also, they learn to integrate and apply concepts and information acquired from prior activities and educational experiences. In the process of making choices and decisions, they must take into account the multiplicity of factors impinging upon the problem and evaluate the possible effects and consequences. Simulations of this type thus offer glimpses into real world situations and opportunities for students to apply their knowledge and test ideas.

The flexible format of this module allows for a diversity of uses. The course and its structure in which these materials will be used is perhaps the best indicator of the way the module should be employed. It may be taught as a continuous unit, or the activities and dilemma discussions may be interspersed in ways that best relate to ongoing topics studied in class. Again, there is no predetermined sequence for the dilemma discussions or the simulations. Nonetheless, because the *Law of the Sea* simulation is the more complex activity, it may be preferable to reserve it for the last.

TABLE 4

ISSUES CONTAINED IN EACH DILEMMA

Dilemma	Issues*								
	punishment/blame	property	affiliation role	law	life	truth	governance	civil rights/ social justics	morality/mores
1: The Wild Deer Hunt					✓			✓	✓
2: *The Life of Chicken Little:* An Excursion into Poultry Farming					✓				✓
3: Beauty on the Surface		✓		✓			✓		
4: The Right to Own		✓					✓	✓	
5: For Food and A Way of Life			✓	✓				✓	
6: In Need of Wood and Forests				✓			✓		
7: The Race Across the Sands	✓							✓	
8: Giants in the Forest		✓	✓						✓
9: Home at Sea		✓		✓					✓
10: Unknowing Bait					✓			✓	✓

*These basic moral issues as identified by Kohlberg comprise the underlying elements of a conflict situation involving a moral decision. Our dilemmas were constructed to incorporate two or more of these issues. Dilemma resolution requires a choice or action to be made beween conflicting issues. For instance, in a dilemma dealing with the issue of governance and social justice, the questions surrounding the issue of governance include: 1) Should one accept or reject the authority of the governing body? 2) What are the characteristics and responsibilities of good government? The social justice issue raises the questions: 1) Should one defend or violate the political, social and economic rights of another person? 2) What are the basis of these rights?

Conducting Dilemma Discussions In The Classroom

Since dilemma discussion may be a new classroom technique, its major characteristics, the basic guidelines, and some helpful suggestions will be described. There are no hard, fast rules for leading dilemma discussions. Most important is that both teacher and students feel comfortable participating in the activity. The following guidelines are merely recommendations drawn from experiences of persons who have conducted moral dilemma discussions in the classroom. These may or may not meet the entire requirements of your particular situation and needs. Adjustments and changes may be necessary so that the dilemmas and discussion format correspond to the intellectual level and interests of your students.

Basic Steps in the Process

The five basic steps in conducting a dilemma discussion as outlined by Kohlberg and his associates are as follows:

Presentation of the dilemma
Selection of alternative positions
Small group discussions
Class discussion
Summary and closing of discussion

Background Information In our materials we have included an additional component – an information base. See Diagram 1, *Schema for Dilemma Discussion.* This background information will provide students with at least a basic understanding of the issues contained in the dilemma and therefore the substantive content which can be used to develop the discussion. Moreover, the background materials serve to bridge the gap between the real world and the hypothetical dilemma situation. Hence, the dilemma will be construed not simply as a story, but as a reflection of real societal concerns and value moral conflicts that arise from our scientific technological activities. Readings or other activities should therefore stimulate thinking and assist students in the formulation of their personal views regarding the action that the main character(s) in the dilemma should take.

The background information provided is by no means extensive, and you may find it desirable to include additional materials as the need arises. If you have readings or exercises which you feel are more suitable for your students, do not hesitate to substitute or supplement what has been included here. In addition, it may be necessary to discuss in class some of the more sophisticated concepts and technical terminology to insure that students have an understanding of the basic issues.

Our desire is to avoid encumbering students with too much technical detail and information. Nonetheless, some classes may wish to pursue certain topics in greater depth and should be encouraged to do so. From our experience, additional research on the part of the students helps to generate a livelier discussion that includes a wide diversity of perspectives.

Following each dilemma are a series of questions. These questions can serve to probe further into the issue or provide the basis for developing other dilemmas. The dilemmas, as presented, focus on a limited instance but, as educators are well aware, issues have many more ramifications and can be built upon to encompass a much more complex situation. Therefore, by proceeding from a simple situation, it is possible to increase the levels of complexity in a step-wise fashion with appropriate questions.

Provocative questions can also help students reflect on how they might be affected by certain decisions or policies and their roles as future decision-making citizens.

Presentation of the Dilemma – After the students have read the introductory material as a classroom or homework assignment, the dilemma can be presented. The dilemma may be read to the class as a whole, or else, each student can read the dilemma for himself/herself. At this point you may wish to determine if the students fully understand the dilemma. This can be identified by asking:

- Do you feel that this is a hard question to answer?
- Will someone please summarize the situation?
- What things might the main character have to consider in making a choice?
- What are the main points in the conflict?
- Who would be primarily affected by the decision?

Small Group Discussion – It is usually recommended that dilemma discussions be first conducted in small groups followed by discussion with the entire class. Students often are more willing to speak out in small rather than large groups. It offers individuals greater opportunity to speak out as well as places more responsibility on each person to contribute to the group's activities. The sense of informality in a small group allows for entertaining unique or unusual ideas that students may hesitate to bring up in a larger grouping for fear of ridicule or "put-downs."

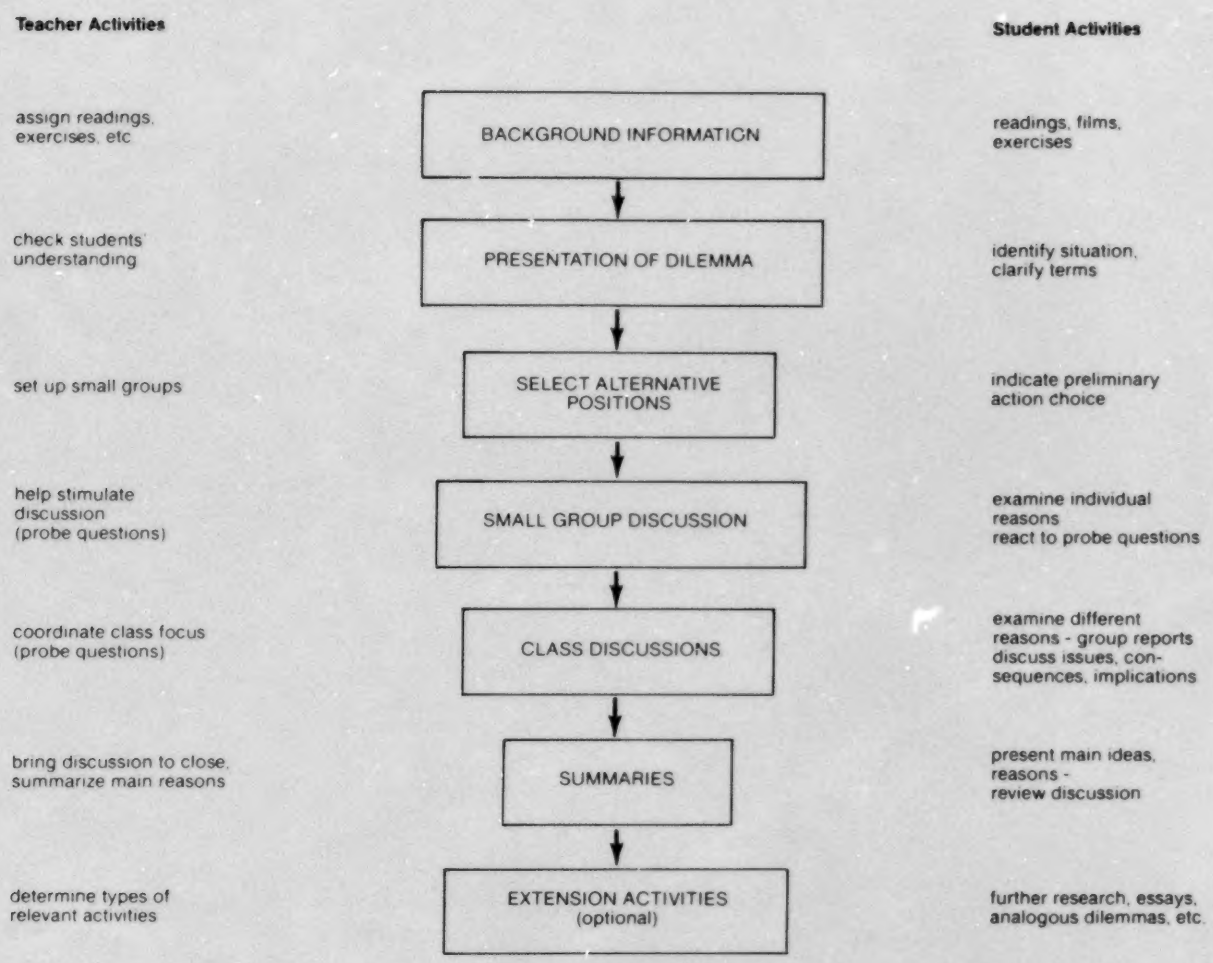
Homogeneous Grouping – The small discussion groups (four to six students) may be formed in a number of ways. From a show of hands or written answers students who vote "yes" or "no" on the question can be identified and grouped according to their position. There should be enough heterogeneity among class members to create division – the question and formation of the small discussion groups.

Small groups where members hold similar positions would provide a more congenial atmosphere for initiating discussion. Here the students will feel less threatened if their peers share the same action decision and be more willing to contribute to the conversation. The membership would be more supportive, and individuals would not sense a fear of attack or failure.

Heterogeneous Grouping – In another format, students may be arbitrarily grouped. Here they have the additional task of evaluating, analyzing, criticizing and challenging the reasons given in the alternative choices. In this approach the degree of controversy is heightened, creating the potential of generating a livelier exchange. In defending a particular choice, the student will need to come up with more convincing reasons in order to persuade the others to support his/her side. Or the group might begin by using a "brainstorm" session and generate a series of supporting reasons for the different positions. These responses can then be examined and compared with one another. Through an elimination process, the group can select the more compelling arguments for each position.

DIAGRAM 1

SCHEMA FOR DILEMMA DISCUSSION



Whatever grouping strategy you decide to employ, all the groups should focus on the moral issues of the dilemma. To more personally involve students in the group discussion have them first express their feelings about the dilemma. Some preliminary questions for consideration might include:

- What issues in the dilemma are hard to talk about? What makes them difficult to discuss?
- Can you foresee yourself having to make such a decision?
- Do you know anyone who has had to make a similar decision?
- Have you recently read any news articles about similar dilemmas?
- How do you think you would feel if you had to make such a decision?
- When you have a problem, how do you think it through?

Once the students become comfortable with the discussion format, they can then begin to critically discuss the position taken and the supporting reasons. They should consider the adequacy of the reasons given as well as the adequacy of their own reasons. After stating comparing and evaluating each of the reasons, they might select two or three of those that they believe best support the position taken on the dilemma issues. Each of the dilemmas contains two or more major moral issues. It is important that the students recognize the issues within a dilemma and direct their attention to the issues and not to the irrelevant aspects of the dilemma (i.e., speculating on the reality of such a situation).

If a group has difficulty in getting started or if discussion begins to lag, the teacher can interject a probe question or two to activate conversation. (See the discussion below on the different types and uses of probe questions.) Sample probe questions are listed at the end of each dilemma and may be used selectively as needed. It is often useful to have students answer a few of probe questions as a written assignment prior to the group discussion. In this way, students have time and opportunity to reflect on the issues and become more constructive contributors to the dialogue.

A recorder should be selected to list the group's conclusion to be presented in a written or verbal form for the entire class discussion.

Class Discussion — The entire class reconvenes to hear the comments made in the various groups. The discussion results of each of the groups are presented for the entire class to examine. They might be best displayed on the chalkboard or overhead projector. This procedure presents the opportunity for students taking opposing views to ask questions and challenge the different viewpoints. Again, the adequacy of the reasons are critically analyzed and merits of each discussed. Students reasoning at lower levels will be exposed to higher level reasoning and discover that their reasons may not have taken wider implications into consideration and hence be less appropriate for resolving the conflict.

The class as a whole can then choose the best reasons for each position. You will find that although students may not be able to generate higher level reasons they will tend to prefer reasons one stage higher than their own.

The class discussion is most fruitful if the discussion guides students to explore ideas they have not considered and to think about those higher level reasons. This can be accomplished through the use of probe questions. There are basically seven types of probe questions:[1]

1 *Clarifying probe:* Asking student to explain what he/she means in his/her statement. "What do you mean when you say that concealing evidence is immoral? What is the meaning of *immoral*?"

2 *Perception checking probe:* Determining whether student understands a statement made by another individual. "Please explain to me what Joe has just said."

3 *Issue specific probe:* Examining student's thinking on the major issues (Kohlberg has identified ten that underlie moral reasoning — see Table 4). "Why should the government establish standards for air quality? What should good guidelines take into account?" (Issues: governance and law)

4 *Inter-issue probe:* Resolving conflict when two or more issues appear to be at odds. "Should a richer country be allowed to use a greater share of the earth's resources?" (Issues: social justice, life, property)

5 *Role switch probe:* Placing student in the position of someone involved in the dilemma. "What would you do if you had to make that decision?"

6 *Universal consequences probe:* Considering the implication of the judgment made when applied to everyone. "What might happen if every household were required to reduce its use of electricity by 30%? Is it fair to place such demands on everyone?"

7 *Reason seeking probe:* "How did you come to this conclusion?" or "Why?"

Questioning along these lines will lead students to broaden their scope of thinking and to evaluate effects and consequences of different solutions. It offers them an opportunity to see how others might think about the same issue and challenges them to consider the many sides of an issue.

Probe questions can also be used to develop alternative dilemmas or introduce more abstract ideas by increasing the complexity of the dilemma. For instance, a dilemma involving personal sacrifices in a gasoline rationing situation might be extended to consider social and life-style changes in our highly mobile society. How should transportation fuel be best allocated? Does private and public interest conflict if gasoline were rationed? Dilemmas of an inter-personal nature can thus be presented from a community, national or even inter-global perspective to stimulate thinking about future implications for human society.

Skillful questioning becomes the tool to aid students to think critically — analyzing the positions they take and the values inherent in their position. They should begin to discover the significance of their principles by relating those principles to specific decisions and situations. Is government severely limiting our freedom of choice when it enacts safety regulations? What should freedom mean? What is the relationship between freedom and responsibility? What should be the role of government in protecting the health and welfare of future society? The constant interplay between the abstract principles, concepts and specific instances is pertinent in making the dialogue a thoughtful, meaningful exercise. Students need to understand concepts on their own terms before they can integrate new concepts and ideas into their thought structure. The process of development is one where students actively experience (or think about) new ideas which in turn interact in restructuring the form of thinking.

Discussion should also include analysis of the information and facts given. How does the information influence the decision? What is inferred from the information presented? Were the facts provided sufficient for informed decision making? What additional information is desirable? How might one go about acquiring additional knowledge? On what basis does one sort out and analyze the facts given? To what degree does the information influence the decision towards one position or another?

Finally, the consequences and implications must be appraised. This is the test of the effects of the position taken; again values are weighed. What values are held? What makes them desirable? What are the priorities? How is the nature of human society perceived?

Closing the Discussion — The discussion can be closed with a simple summary statement of the major points made. This summation will help the student bring together the ideas entertained during the discussion into sharper focus. One approach is to write down the list of the major reasons/arguments "pro" and "con". The reasons most preferred by the students can be indicated, or the reasons can be rank ordered.

The different positions on the dilemmas should not be judged for that would imply a correct answer. A "right" answer would also defeat the purpose of future discussions; students will try to "second guess" the optimum position response. However, at this time the students should have another opportunity to choose reasons they personally prefer or find most persuasive. This decision need not be openly declared. Suggest that the students examine their original reasons after hearing the other comments. What might they wish to change or add?

It may be appropriate at this time to point out some actual situations that resemble the hypothetical dilemma. How were they resolved and what were some of the results? Students may begin to notice analogous dilemmas that are currently making the news headlines. It is a good idea to take every opportunity to relate concepts discussed in class to the students' personal experiences and levels of interest.

Some General Guidelines for Dilemma Discussion

Dilemma discussions should flow naturally and comfortably. However, when students have had little exposure to open-ended types of discussions, it is often difficult to engage them in in-depth exploration of an issue. The following are some pointers that might be useful in stimulating discussion.

Goals of Moral Discussion – Barry Beyer, who has written extensively on moral discussion techniques, has pointed out that the goals of moral discussion should contribute to the overall objectives of the course and general educational goals, in addition to introducing new ones. Hence these goals are general rather than narrow in nature. Among these are: 1) improving learning skills, 2) improving self-esteem, 3) improving attitudes toward school, 4) improving knowledge of key concepts, and 5) facilitating stage change.[12]

An important teaching strategy is to encourage students to think about and reflect on alternatives and consider different ideas. The process of development includes extending one's imagination and exploring one's thinking.[13]

Classroom Atmosphere – Every effort should be taken to create an atmosphere conducive to an open, free exchange of ideas. Students should feel at ease when expressing their thoughts and, when confronted with challenge, not feel that they are being attacked personally. The emphasis is on analyzing the reasoning process by considering divergent viewpoints and alternative choices. It would be stressed that no one answer is correct or absolute; each position has merits and invites investigation.

Classroom furniture should be arranged in such a way that students can speak directly with one another and can be easily heard. For small group discussions the chairs might be arranged in a number of small circles so that attention can be given to all members of the group with-out delineating an authority focal point. The seating should also offer some degree of flexibility so that students might be able to shift groups or share their thoughts with members of other groups. A student who is uncomfortable with one group or who wished to take the opposing position may want to move to another group.

Role of Teacher – The teacher's crucial role in dilemma discussions is that of a creative process facilitator whose function is to stimulate students' searching and "stretching," and help students embark on their own personal search. A key skill lies in sensitive listening. By listening with care and delaying action the teacher can begin to:

- Identify problems that students may have in coming to grips with the issues—do the questions need further clarification?
- Identify students who monopolize or dominate the conversations;
- Find students who are hesitant in expressing their ideas;
- Prevent the discussion from becoming a clash of personalities;
- Find when the discussion begins to lag or focuses on irrelevant details, etc.

By posing questions to the group or certain group members, the teacher can then provide helpful guidance or gently direct the course of the discussion.

At all times it is important that the teacher be supportive and reinforce in a positive manner. Students should not be singled out as having given particularly "good" or "bad" answers. Each response should be taken as a point of departure for further discussion. The question "why" should be the dominant concern.

Some degree of structure in a discussion is necessary but structure should never hinder the flow of ideas. Probe questions can serve as the guiding structure, but they need not be taken in any order or progress in a stepwise fashion. For a given group of students some questions may stimulate more interest or controversy than others; the less fruitful questions, therefore, need not be pursued.

Promoting student to student interaction is another major role of the teacher, requiring insight and patience. The discussion process is an evolutionary one, often requiring much time before a definitive direction can be perceived. At times it may even appear that the discussion is circuitous, but it is imperative that each student has the opportunity to air his/her views and partake as an active member of the group. The student, when he/she becomes confident in himself/herself and recognizes the worth of his/her ideas, will then accept the responsibility of his/her role in the group as well as become more receptive to the ideas of others.

Characteristics of Dilemma Discussion

- *Open-ended approach:* There is no single "right" answer. The goal is not to reach agreement but to critically discuss the reasons used to justify a recommended action. The emphasis is on *why* some reasons may be more appropriate than others.
- *Free exchange of ideas:* Students should feel comfortable in expressing their thoughts. Each student should have an opportunity to contribute to the discussion within a non-judgmental atmosphere.
- *Student to student interaction:* The conversation is primarily between student and student, not teacher and student. The teacher uses questions to guide the discussion and to encourage students at adjacent stages of moral reasoning to challenge one another. Lecture or recitation should be avoided.
- *Development of listening and verbal skills:* Each student should be intimately engaged in the discussion activity, building and expanding on one another's ideas as well as examining each response critically.
- *Focus on reasoning:* Reasons are to emphasize the prescriptive "should" rather than the "would" arguments.
- *Dilemmas produce conflict:* Conflict heightens student involvement and interest and should have a personalized meaning for the student. Resolution of internal conflict is a precondition for advancement to higher stage reasoning.

Helpful Hints

- Review carefully the dilemma to be discussed in class and try to anticipate any problems that students might encounter when dealing with the dilemma.
- Identify the main issues and list a few questions that might help clarify the issues for the students (particularly, how these issues might relate to the students' lives).
- Determine if there are words or concepts that may be unfamiliar to your students. These should be defined and

discussed so that the students do not become overwhelmed by the terminology and can more easily grasp the essence of the problem.

• If you have readings which you feel are more pertinent or appropriate, use them in place of those included here.

• Consider whether or not the dilemma poses conflict for your students. It is often possible that the dilemma as written is either too sophisticated or too simplistic, and the students cannot appreciate the implicit conflict. The dilemma question might be reworded or altered in order to elicit a division of opinion among the students.

• When presenting the dilemma story make sure the students understand the problem and the goal of the discussion activity. This can be accomplished by having a student summarize the story and list some of the possible alternatives available to the main character(s).

• If a class is not accustomed to discussion-type activities, it might be wise to group the students in such a way that those who are more vocal and aggressive do not dominate or monopolize the discourse. Try to balance each group with different personality characteristics.

• When the discussion has difficulty getting started or gets bogged down, have the students role-play the main character. The shift in focus can assist them in gaining additional perspective into the situation.

• Try not to be too impatient if the discussion does not seem to go anywhere. As in any other type of group interaction, some warm-up time is necessary so that students can relax and reflect on their own thoughts.

• Students may continually look to you as teacher for direction and "correct" answers. When asked a question you can shift the attention by posing that question to another student and seek his/her opinion. In this way the dynamics of student interaction can be maintained.

• Tape recording some of the student dialogue may be useful as an evaluation tool to help organize future discussions and suggest additional probe questions.

• It is important that the discussion does not drift aimlessly or become a clash of personalities. Skillful interjection of probe questions will provide direction to the group discussion; therefore, become familiar with the different types of probe questions so that you can use them with fluency.

Questions Commonly Asked

• *In order to lead dilemma questions, do teachers need to identify the stage at which a student reasons?*

No, there is usually enough heterogeneity within a classroom so that several stages of reasoning are represented. Most important is to encourage different students to engage in the dialogue and to bring out the many different ways to resolve a problem.

• *What if everyone in the class takes the same position?*

This does not present any difficulty. The particular position taken is not important; what is important is the argument used to support the position. The different levels of reasoning on the dilemma should provide sufficiently lively debate. Students can also be asked to put themselves in the other position and develop arguments to support that position.

• *Should students be required to give reasons for their decisions?*

No, if reasons are not volunteered, you can simply ask another student to comment. The debate should not be forced but evolve naturally.

• *How does one detect student growth?*

Development is a slow process and a limited number of classroom dilemma discussions is not expected to advance students from one stage to the next overnight. However, students having experienced a diversity of alternative ideas should begin to develop an increasingly more global orientation and consider the different aspects of a problem.

• *Will a student reasoning at higher levels regress and accept the reasons of a more forceful lower stage argument?*

No, regression is not consistent with the stage theory. Persons reasoning at higher stages will see their argument reinforced as the discussion continues. Their reasons can deal more effectively with the question over a broader variety of situations; lower stage reasons begin to fall short. Studies have demonstrated that higher reasons are preferred over lower reasons.

• *How long does one continue the discussion?*

Discussion should continue for as long as it is fruitful and students continue to display a level of interest and involvement.

• *Is the object of the discussion to convince the class to accept higher level reasons?*

No. Simply "parroting" higher stage reasons does not effect or indicate growth. A stage reflects one's dominant mode of thinking on moral issues, one that is utilized. The purpose of the discussion is to provide new exposures and create a state of disequilibrium so that individuals begin to rethink and restructure. Discussion facilitates the course of development; it does not dictate it.

[11] Edwin Fenton, Ann Colby and Bet[illegible]peicher-Dubin. *Developing moral dilemmas for social studies classes.* Cambridge: Harvard University, Moral Education Research Foundation, 1974.

[12] Barry Beyer. Conducting moral discussions in the classroom. *Social Education,* April, 1976, 195-292.

[13] Clive Beck. *Ethics.* Toronto: McGraw-Hill, 1972.

Section One:
LIFE ON EARTH

Teaching Strategies
And Student Activities

Overview

This section of the student's booklet contains ten dilemma stories for student discussions. Each raises a different type of question about our behaviors, attitudes and responsibilities towards other living things. As mentioned earlier, they follow no prescribed order and will produce more interesting discussion if they can be related to topics currently studied in class. The time you spend to carefully review each of the dilemmas when you plan your course curriculum will be well worth your while. Each dilemma is more complex than it appears on the surface. As you read through them, you will no doubt begin to discover the variety of topics that relate to the issues incorporate in the dilemma.

It is also recommended that some interval of time, such as two or three days, elapses between dilemma discussions. A continuous diet of dilemma discussions can become laborious and reduce their impact. As with all classroom activities, it is useful to provide variety in order to stimulate student interest and curiosity. Important to bear in mind is the idea of active student involvement and the need to devise strategies that encourage students to seek new ideas and knowledge.

The format of this section is:

- BACKGROUND READING(S)
- HYPOTHETICAL DILEMMA STORY
- DISCUSSION QUESTIONS

Background Readings

The background readings have been selected on the basis of the arguments they raise on issues contained in the dilemmas. Hence, they are intended to familiarize students with the topic and provide some initial ideas for discussion. Space limitations have necessitated eliminating many excellent articles that otherwise would have been included. Also, we do not wish to overburden students with so much reading that the assignment becomes tedious. However, it is important for students to read the introductory articles prior to the class discussion. Otherwise, the discussion can become a mere exercise of unfocused chatter. You may have other articles that are more current or illustrate a similar local situation. These articles may replace what we have included or serve as additional references. Local articles bring the topic "closer to home" and can enhance understanding of the issues as well as help relate classroom learning to immediate community concerns.

Moreover, the background readings demonstrate the importance of information and knowledge in decision making. In order to make wise and responsible decisions, one needs to be informed as well as be aware of the multiple factors that impinge upon and interact in the situation. Nonetheless, the writers are not free from bias. Given that writers are not totally objective, students must be aware of their prejudices and point of view. As the students read the articles, help them critically analyze the writers' intent, the types of persuasive techniques employed and the form of the arguments. Students will need to consider the logic of the argument, whether conclusions follow from the premises, as well as the subtle devices used to elicit emotional reactions. Constructive critiques or analysis of the articles can be incorporated in the small group or class discussions by interjecting appropriate questions at opportune times. Many times students may simply parrot arguments from the readings so that challenging them to reflect upon their statements serves as a strategy for assessing the perspective/position of the writer. Thus, a crucial lesson in these activities is learning to evaluate information critically and to discriminate between fact and opinion.

Hypothetical Dilemma Stories

General guidelines for conducting dilemma discussions are found on pages 14 to 18 of this guide. A careful review of this section will provide insights on how to facilitate interesting class discussions and make them useful learning experiences. Although the dilemmas are written for a class discussion format, they may be easily adapted for other formats without major changes or revisions.

One format, the classroom debate, is outlined in the student's booklet and provides a change of pace from the typical discussion. Several of the dilemmas may be conducted as a mock trial — another alternative. Both of these formats are more formal and require more preparation on the student's part. The more structured presentation demands careful and logical development of the arguments and, in addition, helps students practice and improve upon their public speaking skills. If you elect to conduct debates or mock trials, it is important to insure that all students participate actively. Students not involved in the actual presentations should help the speakers identify the major arguments, conduct research and serve as "devil's advocates" when the presenters practice their arguments before their own group. The preliminary preparation is the more important aspect of these activities, and the amount of imput provided by team/group members will directly reflect upon the quality of the presentations.

Some dilemmas may serve as a basis for role play activities. As students construct their role characters and develop the dialogues, they will be induced to explore the issues in greater depth. If you choose to role play the dilemma, have the students develop two scenarios, one that explores the implications and consequences of one decision and likewise, one for the other decision. In this manner, they will have taken into account the opposing sides of the question. Role play is an especially useful technique to help students gain a better understanding of another person's perspective. In such situations they must disassociate themselves from their own mode of thinking and place themselves in a different position, very often a position in direct conflict to their own. If you have access to videotape equipment,

you may wish to videotape the presentation. Having to perform before a camera offers an incentive to be well organized and engenders a greater sense of importance. Moreover, the videotape can be used as a method for presenting the dilemma to other classes.

Another possible format is that of a class survey. Students may wish to conduct an opinion survey using the dilemma as the questionnaire. A survey offers a number of valuable learning experiences. Students will have an opportunity to gather opinions from people other than their classmates. Encourage them to interview people of different ages, from different backgrounds and experiences and representing different professions. In this way, the opportunities for experiencing a wider range of ideas increase. Also, students will gain experience in communicating with people outside their immediate peer group. The responses that they obtain will serve as additional ideas for class discussion. However, before the students proceed on their survey, they should receive adequate instructions and guidelines for conducting interviews. The instructions should include some of the following points:

- **Preparing for the interview.** Help students:
  - identify the purpose of the interview and make sure they understand the task (i.e., to obtain opinions, not to engage in an argument)
  - select population to be interviewed
  - select a limited number of questions to ask and test the questions to make sure they are easy to understand and elicit responses.
  - practice the interview so students are confident when they go out.
  - practice techniques of good listening

- **Conducting the interview.** Suggest that students:
  - arrange a convenient time and place for the interview. The place should be quiet and comfortable. Sufficient time should be set aside so that one is not hurried or interrupted.
  - remember that the interviewees are giving of their time and efforts. Students should be efficient and focus on the task.
  - appear neat and be well mannered (i.e., remember to thank the interviewer, etc.).
  - explain the purpose of the interview, ask questions clearly, and make sure the other person understands the questions.
  - try to get the interviewee to explain their responses as completely as possible. (Since this is not a "yes" or "no" type of survey, the interviewer needs to encourage the other person to express his or her thoughts and ideas by showing interest and probing gently.)

The results of the survey can be summarized and used in a number of ways. For example, the class might convene in small groups to analyze the responses, summarize the predominant reasons and present their findings to the entire class. Students might then decide what opinions they most agree or disagree with and meet again in small groups to discuss their own reasons for supporting or not supporting a given position. Another procedure might begin by grouping the responses based on a characteristic of the population surveyed, such as according to age. The different responses might then be compared and contrasted. Some generalizations about the characteristics of a particular group might then be discussed. That is, what concerns might younger children focus upon? How do these differ from that of an older group? How might one account for these differences? Are some reasons more completely thought out than others? The opinion survey activity, thus, exposes students to a wider diversity of ideas and offers additional opportunities to analyze and critically evaluate the information obtained.

Discussion Questions

The discussion questions that follow each of the dilemmas are intended to help students explore the dilemma in greater depth and examine the number of considerations that enter into decision making. Additionally, they can serve to activate the discussion. When the discussion of the group seems to lag or reach an impasse, your interjection of a pertinent question can quickly revitalize the discussion. Hence, there is no set order for using the questions nor do all questions need to be covered: in fact, many of the questions might well be raised spontaneously during the discussion. These questions are only a sample of the different types of questions students might examine in the course of the discussion. You, no doubt, will identify many more, expecially questions that relate to concepts covered in your course.

The questions are also useful to initiate students to think about the dilemma before they share their ideas with others. For example, have the students read the dilemma and assign one of the questions to be answered in writing for homework. When the students return to class the next day and meet in their small groups, they will have formulated some opinions and organized some ideas on the subject. The process of recording ideas on paper requires students to reflect more critically on the issues so that they are better prepared to contribute to the discussion.

Some of the questions are designed to direct students to think about the effects and consequences of particular discussions from the perspective of society-at-large. Such questions can help to focus the discussion on the major aspects of the problem since students easily get side-tracked and dwell upon less relevant points. Also, questions of this type can serve as the essay topic for a written assignment that summarizes the many ideas brought out in class discussion.

The skillful use of questions cannot be over emphasized. The success of the discussion rests to a large extent on the types of questions entertained and using questions to get students to think about their own thinking. Eventually, as students become more experienced in the discussion process, they will generate their own questions spontaneously and need not rely on questions we have provided.

Comments and Suggestions

Dilemma 1: ***The Wild Deer Hunt***

TOPICS EXPLORED:

- Sport Hunting
- Wildlife Management

The topic of sport hunting ranks among the most emotionally laden subjects. Advocates on one or the other side maintain their position adamantly and are at such diametrical extremes that it is difficult to find a common basis for discourse. Typical arguments tend to be so emotionally charged that they overpower reasoned and rational considerations. When your students discuss this dilemma, try to keep them from turning the discussion into a zealous display of passions. A strategy to minimize this possibility is to have the students, before they commence the discussion, identify the major arguments from the different positions. When they meet in their small groups they can begin with an analysis of the various arguments, examining the validity of the premises and tracing the logic of the reasoning. This process will also assist in bringing the major issues into sharper focus.

Dilemma 2: ***The Life of Chicken Little: An Excursion into Poultry Farming***

TOPICS EXPLORED:

- Livestock Farming Practices
- Modern Farm Technologies and Economics
- Animal Rights

Domestication of animals for food has served as a basic means for human survival through the ages. The more recent advent of modern technologies and advances in scientific knowledge has brought about new livestock raising methods. The factory production orientation of these methods have aroused the concerns of a sector of the public who pose questions regarding proper treatment of livestock. It is this question, and not necessarily that of promoting vegetarianism, that is the issue in this dilemma. In their discussion, students will need to examine how humans view their relationship to animals and the issue of basic animal rights.

Dilemma 3: ***Beauty on the Surface***

TOPICS EXPLORED:

- Animal Experimentation
- Product Safety Testing

While many advocates of animal welfare object to any use of experimental animals, the intent of this dilemma is to call attention to the types of experimental procedures requiring animals and examine attitudes regarding use of animals in the research laboratory. The United States, for the most part, has few restrictions or guidelines for animal research. Moreover, the concern of food, drug and other product safety has accelerated the use of animals in the testing programs. Consequently, many prevailing practices have been dictated by our perceived needs and acceptance of conventional techniques. The issues raised here center upon: 1) How can animal abuse be minimized? 2) What types of animal research are justifiable? 3) What other alternatives are available? 4) Is the development of certain products unnecessary?

Dilemma 4: ***The Right to Own***

TOPICS EXPLORED:

- Recombinant DNA
- The Role of Scientific Inquiry
- Ownership of New Forms of Life

Although the Supreme Court has ruled that laboratory created life forms may be patented, the moral and safety implications of gene splicing remain unresolved. While ownership of a single cell organism may appear seemingly innocuous, the potential of creating more complex life forms and how they might be used or misused presents more troubling questions. A fundamental question is the question of whether we have the right to tinker with life forms, altering the natural course of evolution. Do humans have the wisdom to control and direct the development of life? Will the future of earth and future human generations be adversely affected by the newly created species? Associated with these questions concerning who determines what is created and how the new creations are to be used. That is, what are the limitations to our cherished freedom of scientific inquiry? If the new creations accidently become deadly pathogens and infect the populace or become uncontrollable, who can be held responsible? The questions become even more difficult when we consider the possibility of cloning higher forms of life. Will they be the property of the inventor? Will they have rights and how can their rights be protected?

At another level are questions surrounding the relationship between scientists and the public, and between industrial secrecy and open access/sharing of scientific information. With the fast growing commercialism of

recombinant DNA products, research scientists have become entrepreneurs. The traditional sharing of scientific information important to scientific advancement becomes cloaked with secrecy to protect commercial interests. Safety concerns over laboratory procedures and resultant products raise questions about government's role in regulating those activities.

This dilemma thus raises a number of new issues currently debated at many levels — scientific, economic, political, public. Your classroom discussions may focus on any number of the issues and produce interesting ideas about questions surrounding our biomedical revolution.

Dilemma 5: ***For Food and A Way of Life***

TOPICS EXPLORED:

- Protection of Endangered Species
- Food and Culture
- International Relationship and Treaties

This dilemma examines whale hunting restrictions from the perspective of native Eskimos. Their very survival, social structure and cultural traditions come into jeopardy when restrictions are placed on whaling activities. Although the dilemma question focuses on the Eskimos' obligation to abide by an international agreement, other aspects of the dilemma should be explored in the discussion. Some of these issues relate to the U.S. government's role in protecting an endangered species and its obligations to protect the Eskimo way of life. The current situation stems from earlier uncontrolled exploitation of whales, the consequences of which Eskimos now bear. The delicacy of this situation from the standpoint of international agreements and compromises on commercial whaling should also be considered.

Dilemma 6: ***In Need of Wood and Forests***

TOPICS EXPLORED:

- Deforestation
- Resource Conservation
- Subsistence Survival

Garrett Hardin's scenario — "Tragedy of the Commons" — has been replayed time and again, but is perhaps most poignantly illustrated in many Third World countries where the struggle to maintain a bare subsistence survival has lead to untold environmental destruction. This dilemma exemplifies the difficulties faced by governments and policy makers who want to reverse the fast-growing loss of important forest lands. At the personal level where there are no alternative fuel sources, decisions to cut trees become a question of maintaining life. It is hoped that discussion of this dilemma will increase students' awareness of the enormity of the problems related to soil depletion and erosion. Relationships should also be drawn between soil productivity and feeding the world's ever expanding population.

Dilemma 7: ***The Race Across the Sands***

TOPICS EXPLORED:

- Desert Ecology
- Environmental Protection
- Land Use and Recreation

Efforts to protect desert land may come as a surpise to most people because we typically view deserts as barren waste lands. The reading accompanying this dilemma, however, offers an excellent description of desert ecology and points out problems that emerge when fragile deserts are disturbed. Conflict in this dilemma stems from the concern of protecting the integrity of deserts and the use of public lands for off-road recreational activities. This dilemma also illustrates the types of dilemmas faced by park service officials who at the same time must preserve natural resources and provide for the "pleasure" of park visitors. To resolve such a dilemma it is important for students to develop an understanding of the ecological system in question and weigh ecological values against values held by special interest groups. Moreover, as with all decisions, consideration must also be given to long range effects on the different factors and needs of the public-at-large.

Dilemma 8: ***Giants in the Forest***

TOPICS EXPLORED:

- Resource Preservation
- Resources and Economics
- Aesthetic Values

Controversy surrounding the giant redwoods typifies conflicts between commercial interests and efforts to protect unique natural resources. Preservation of redwood forests encompass issues of watershed protection, soil erosion, allocation of funds for park acquisition, lumbering, economic impacts and so on. However, the focus of this dilemma is on the concept of a unique national heritage and the right of future generations to this heritage. Some questions raised include the following: What are the values of trees that are thousands of years old? What obligations do we have to future generations? Since redwoods, like other trees, are renewable resources, is it sufficient to replant what has been removed? How does one determine what is in the best interest of the public?

Dilemma 9: ***Home at Sea***

TOPICS EXPLORED:

- Animals in Captivity and Scientific Research
- Animal Liberation
- Ownership Rights and Responsibilities

This dilemma, based on an actual milestone case, raises the question of holding animals in captivity, especially those animals considered to be more intelligent. At issue are the rights of animals and their freedom. The defendants who released two dolphins from a research laboratory and returned them to the sea contended that "human beings have no right to hold intelligent, feeling beings like dolphins in captivity." This brings up the intriguing question of what constitutes the social, emotional and behavioral needs of animals and the meaning of animal freedom. On the other hand, the acquisition of much scientific knowledge is based upon animal studies which create the dilemma of whether or not human goals can be advanced if animal rights were recognized.

An auxiliary question concerns that of returning captured animals to their natural habitat. Animals fed and trained by humans often lose their ability to fend for themselves in the wild. When released they become easy prey for other animals or succumb to the harsh elements. This has become a serious problem when people raise lions, chimpanzees, wolves and so on as pets and discover that they no longer wish to or can care for them. For example, what responsibilities do people have toward animals who have developed human abilities, such as chimpanzees who learned the use of sign language?

Dilemma 10: ***Unwilling Bait***

TOPICS EXPLORED:

- Fishing Techniques
- Animal Protection
- Ecosystem

The issues represented in this dilemma are complex and confounding because we depend upon animals for our survival and livelihood and yet desire to protect endangered or certain types of animal species. The dilemma and readings also serve to illustrate the paradoxes among our attitudes and actions. We may express outrage over the mass killing of dolphins to protect a community's fishing industry, yet ignore the fact that our tuna sandwiches come about at the expense of hundred of porpoises trapped in tuna nets. This dilemma is found in a variety of other situations where one animal species interferes or competes with our efforts to raise animals or plants for food: wolves are hunted to protect sheep; rabbits are poisoned to protect crops; sea otters are killed to protect clam and abalone beds.

Section Two:
RESOURCES AND CHOICES

Teaching Strategies
And Student Activities

Activity 1, Part 1: The Case of Mineral King

Overview

Parks and recreation evoke different meanings and emotions for different people, and the clashes between the various viewpoints have become, in recent years, prominent news headlines. The future characteristics of national and state parks are influenced by decisions such as whether to enlarge the airport at Jackson Hole, to grant concessions to run motor rafts on the Colorado River, or to remove commercial facilities from Yosemite Valley. How to best accommodate a public seeking recreational opportunities and vacation refuge from urban pressures and yet preserve unique natural environments becomes a difficult dilemma to resolve.

We selected the Mineral King controversy for this simulation because it contains a number of perplexing issues as well as poses an unusual legal question. The legal issue in this case dealt with the question "Who can speak for inanimate objects and do inanimate objects have basic rights?" The Sierra Club, in *Sierra Club vs. Morton*, sought to halt the development of Mineral King, a wilderness area in the Sierra Nevada Mountains of California. The club filed suit on behalf of Mineral King against Secretary of Agriculture Morton, contesting the actions of the Forest Service in granting a lease to Walt Disney Enterprises to build a ski resort. Sierra Club members charge that the Forest Service failed in its duty to maintain the area as a national game refuge. The case came before the Supreme Court which had to decide on whether citizens have the right to represent the interest of the natural environment and challenge decisions on policy that might endanger the integrity or character of that environment.

Although a decision has been handed down by the Supreme Court, the arguments in the case remain pertinent. In the simulation, however, less emphasis is placed on the question of "standing in court" and the greater focus is on the arguments between the conservation interests and development interest. Hence, during the course of the simulated court hearing, a variety of questions will emerge. Included among them are the following:

- What are the values of the wilderness? Can such values be measured?
- What obligations do we have towards future generations?
- How can people partake in natural aesthetics if they are inaccessible?
- Should parks serve the masses or the elite few?
- How can short term benefits be weighed against long term benefits?

Students will be exposed to the different sides to the questions when they develop their own arguments and when they hear the various presentations. Six different interest groups and the defendants are represented, and although they are aligned on one or the other side of the argument, the groups approach the argument from somewhat different perspectives. These differences serve to illustrate the multiple facets of the situation and the mumber of variables that need to be considered in decision making.

Representing an interest group or defendants, students will develop arguments in support of their position for presentation before the judicial panel. In developing the presentation, they will need to identify the more important aspects of their position and find evidence to create powerful and convincing arguments for their side. Each group will in turn make its presentation. Upon completion of the proceedings and questions each judge will evaluate the testimonies and write his/her decision that will be read to the class.

Materials:

Student Handout 1: *Worksheet for Developing Testimony*

Student Objectives

- To participate in a simulated court hearing.
- To develop effective arguments in support of one's role position.
- To consider some of the issues and conflicts concerning public land protection and development.
- To gain a wider perspective on the attitudes of people regarding the wilderness.

WORK SHEET FOR DEVELOPING TESTIMONY

STUDENT HANDOUT ONE

Activity 1, Part 1

Interest Group _____ Major Concern/Needs _____

Arguments to Support Position	Evidence to Support Arguments	Present and Future Effects/Benefits
1.		
2.		
3.		
4.		

Student Activities

Simulation Plan

PREPARATION

Groups meet and prepare testimonies. Judge prepares questions.

COURT HEARING

Groups, in turn, present testimony

DECISION

Judges write decision and read it before the court.

—Preparation

1. Students will represent one of the following roles

   The Sierra Club (2-4)
   National Environmental Law Society (2-4)
   Wilderness Society (2-4)
   Walt Disney Enterprises (2-4)
   County of Tulare (2-4)
   Far West Ski Association (2-4)
   The Forest Service (3-4)
   Judges (3 or 5) (students or invited guests)

2. Use your discretion to determine how the groups should be formed — by student selection, teacher assignment or random drawing. Simulations are most effective when every student contributes to the activity.
3. Review the procedure in the student's booklet with the students so that they all understand their tasks.
4. Allow sufficient time for the students to prepare their testimony. The group positions given in the student booklet should serve only as a guide for developing their argument. The presentations will be more interesting if students do outside research and obtain evidence to support their arguments. Suggest that they locate news or magazine articles that reflect their opinions or illustrate an argument. They may also draw upon their own experience and observations on parks they have visited. Popular magazines such as *National Parks and Conservation Magazine, Natural History, Smithsonian, Outdoor Life, R-V, National Geographic, National Wildlife, Ski, Sports Illustrated, Field and Stream* may be useful.
5. Suggest that the students carefully outline their presentation and practice it before their own group to insure that they keep within the alloted time and have included all their arguments.
6. One group member may be selected to give the presentation, but ideally, if the groups are small, the presentation can be shared by all members. Dividing up the presentation encourages more active involvement.
7. It may be preferable to invite guests to serve as judges. When students prepare for outsiders, they tend to take their tasks more seriously. Also, outside judges may be more objective and less likely influenced by peer pressure. If class members serve as judges, have them carefully review the group positions and make a list of possible questions to ask each group. They may also wish to review some court decisions to gain some perspective on how judges arrive at their decisions and the types of considerations they take into account.

—The Court Hearing

1. At least one full class session should be alloted for the presentations. The number of questions or length of questioning should be specified beforehand. This decision can provide guidance in determining the number of class sessions required.
2. The Sierra Club and its supporters will present its arguments followed by the supporters for the Disney development and the Forest Service. Judges may ask questions after each presentation.
3. A timekeeper should be selected to make sure that the speaker stays within the alloted time.

   Each judge will make a worksheet following the example given and use it to keep notes on the proceedings.

—The Decision

1. Judges will meet in an open meeting to discuss the testimony and review the major issues presented.
2. Then each judge will, in private, write out his/her decision and provide an explanation for the decision. This may be best done as a homework assignment. When the class reconvenes the follow-

ing day, the judges will read their decision and accompanying explanation.

Comments and Suggestions

—After the judges' decisions are read, spend some time to debrief the simulation. Debriefing is an important aspect of any simulation and serves a number of useful purposes.

- It permits students to express their feelings about the activity.
- It serves to identify methods to improve upon the activities.
- It is an evaluation exercise.
- Students have an opportunity to reflect upon the concepts and ideas brought out in the simulation.

In debriefing, the strategy commonly used is to proceed from the specifics of the simulation to more general concepts. Some of the following questions may be useful to initiating discussion.

- What persuasive techniques were used? What technique seemed most effective?
- How did the class feel about the court's decision?
- Did students find it difficult to take positions that differed from their own? How well did they represent their role?
- Did all members of the group actively participate? How might the tasks be modified or changed to increase participation?
- Was it an useful learning exercise? Was it enjoyable?

Following discussion of the specifics of the simulation, use the Background reading of Activity 1, Part II as the basis for discussing the concepts brought out in the simulation.

- In what ways did the simulation differ from the actual case? What was the focus of the Supreme Court's decision?
- What are the similarities and differences between the students' decisions and the concerns of the dissenting judges?
- What problems arise in the management of scarce resources?
- What benefits do humans derive from natural areas? What are some that do not fall in the realm of aesthetics? (Consider for example the CO_2 - O_2 cycle, watershed areas and water supply, diversity of plant and animal species, clean air, retention of topsoil and so on.)

—For additional readings on wilderness values and the Mineral King controversy, see the Appendix section of this guide.

—As an extension activity or special project, have students research recent court decisions on environmental cases and analyze the positions taken by the courts. Discuss the prevailing attitudes and possible changes since the *Sierra Club vs. Morton* case.

Activity 1, Part II: Voices of Trees and Rivers — A Classroom Trial

Overview

This activity is an extension of the preceding activity and explores the concept of legal standing of natural objects (the right to be presented by legal counsel), an idea offered in a book by Christopher Stone, a professor of law. In this activity students will consider the ramifications and effects of extending the concept of legal standing to include the environment. Students will conduct a trial based on a complaint they select. It is assumed that the courts will hear cases involving damages or injuries to an inanimate object and that it can be represented in court by a lawyer. Students will role play the parts of the plaintiff, defendant and judge.

Student Objectives

- To conduct a trial involving a natural object.
- To explore the question of environmental rights.
- To examine how societal attitudes might change if the environment were conferred legal rights.

Student Activities

— *Preparation*

1. Students will represent one of the following groups:
   PLAINTIFFS (lawyers and witnesses)
   DEFENDANTS (lawyers and witnesses)
   JUDGES (a single judge or a panel of 3 or 5)
2. Plaintiffs will meet to select and draw up a complaint. The complaint may be selected from one of the issues suggested in the students' booklets or one of their own choosing. The complaint is then presented to the defendants and judge(s).
3. Plaintiffs and defendants will then meet in their respective groups to assign specific tasks and prepare their arguments. Judges will meet to organize the rules for the court proceedings.
4. Sufficient time should be provided for students to research the issues and prepare effective argu-

ments. It is suggested that students first identify the most important elements of the issue and assign them accordingly to the members of the group. In this way, each person will be responsible for a specific area and concentrate on developing an in-depth argument. For example, a group may be represented by several lawyers, and each lawyer will focus arguments on specific points. Depending upon the size of the class, students may assume the role of lawyer or witness or alternate in their role as lawyer and witness. (If students play more than one role, name plates should be used so that a particular role is clearly identified.)

5. Judges will establish the rules for the trial and present a written copy to each group. Procedures and time limitations should be clearly specified to avoid any misunderstandings.
6. Students may need some assistance in formulating their complaints and counterarguments. An issue that is well thought out will help to avoid trivial rhetoric. The book, *Should Trees Have Standing*, by Christopher Stone is a helpful resource and will provide additional insights for you in guiding the students.

— ***The Trial and Decision***

1. The trial will be conducted according to the procedures determined by the judges.
2. Judges should prepare and use a worksheet similar to the one suggested in the preceeding activity for note taking.
3. As before, judges will write out their decision and read it before the court. The court's decision will be based on the ruling reached by the majority of the judges.

Comments and Suggestions

— As indicated in the preceding simulation, some time should be devoted for debriefing the activity. Some discussion questions are found in the student's booklet. In addition, you may wish to have the students examine the relationship between legal decrees and changes in human attitudes and behaviors. That is, if legal rights were granted to natural objects, how might this affect our "environmental consciousness"? Also, extending rights to natural objects raises a number of new questions such as:

- What criteria does one use to determine what is proper or improper use of the environment?
- How does one balance human needs against preserving natural environments?
- To what extent will we be able to alter our activities to better protect the environment?
- How does one decide what is desirable or undesirable for the environment? Do human values necessarily coincide with what "nature" may value?

Activity 2: The Law of the Sea Conference: A Simulation

Overview

The simulation of the Law of the Sea Conference addresses the basic issue regarding the right and freedom to use a common resource — in this case, the resources of the ocean. Underlying the issue is the perplexing question of whether or not a common resource can be freely utilized without constraints. An intriguing argument on this point has been forwarded by biologist, Garrett Hardin, in a article entitled "Tragedy of the Commons."[1]

Using the example of the village commons in preindustrial England, Hardin pointed out that the system which permitted all villagers free use of grazing pastures worked well when the herdsmen kept their grazing livestock at a small constant number. In the early days, war and disease held down the size of the herds. In more favorable times, a herdsman found that he could enhance his profits by increasing the size of his herd. Other herdsmen followed suit, for they saw no personal benefit in keeping their herds small. At some point, however, the capacity of the common pastures to provide adequate grazing for all reached a limit and grasslands soon became exhausted to everyone's detriment. Hardin, thus, contended that the freedom to use the commons without restraint leads to waste, exploitation and abuse because each user strives to fulfill his own self-interest, ignoring the potential, long-range undesirable effects.

In our modern, highly industrial and highly populated society we can find many situations analogous to the over-grazed village commons such as the vast barren areas that were once forests, extinction of animals species from hunting, polluted waters, or natural park lands threatened by overuse. The customarily accepted principle of "freedom of the high seas" is another possible "tragedy of the commons" candidate if nations continue on a self-serving course. Some problems are already emerging — many species of fish have become scarce as a result of overfishing; shellfish beds are polluted by the dumping of sewage; beaches and marshlands are disaster areas created by oil spills. Several sea mammals have joined the list of endangered species. The question thus becomes, 1) what types of controls or restraints are necessary, 2) who has to ensure the continued productivity of fishing and other re-

sources, and 3) how can the interest of all be served and protected? Questions of this nature are currently examined and debated at the Law of the Sea Conference. There are, however, no simple, straightforward answers. The complexity and subtlety of the issues are overwhelming but need to be addressed and resolved to everyone's satisfaction.

The intent of this simulation is to provide an opportunity for students to consider a number of these issues from several different perspectives in order to understand the significance of long term visions in resource utilization and conservation. The question raised here is what is an individual's, a nation's, or the human species' right to a common heritage? What are the responsibilities?

Materials

Student Handout 2: *Worksheet for Developing Laws of the Sea*

Student Objectives

- To participate in a simulated Law of the Sea Conference.
- To examine the issues and problems associated with the development of an international treaty governing the use of the seas.
- To partake in the processes of negotiation and reaching consensus.
- To recognize the many divergent views and interests held by different nations.
- To understand some of the economic and political factors that enter into international treaties.

Student Activities

1. The class as a whole will develop a Law of the Sea document using the process of consensus. Points covered by the document will address the following subjects:

   FISHING
   PROTECTION OF MARINE MAMMALS
   MARINE POLLUTION
   SHIPPING AND NAVIGATION
   TERRITORIAL ZONES
   MINERAL RESOURCES
   SCIENTIFIC RESEARCH
   MARINE DISPUTES

   Some of the major concerns surrounding each of these subjects are briefly outlined on page 98 of the student's booklet, *Of Animals, Nature and People.* Students should become familiar with these concerns and discuss them in their groups prior to writing the draft of the laws.

2. Students will represent members of the following groups of nations:

   DEVELOPED INDUSTRIALIZED NATIONS
   LANDLOCKED NATIONS
   DEVELOPING COASTAL NATIONS

   You may wish to assign students to the groups or allow students to make their own selections. However, to more realistically simulate the real world, the size of the groups should not be equal; the group of developed industrialized nations are, in fact, in the minority.

   Each group member is to select a country he/she wishes to represent and become familiar with some of the basic information/data of that country. In-depth research on the country they represent will enhance the simulation, because the insight they gain will provide ideas for discussion and debate. Allow sufficient time for research, preferably before they meet in their groups. When they assemble in their group each student will bring a nameplate displaying the name of the country and some statistics describing it — e.g., population, size, per capita income, products, etc. (For ease of identification, each of the three groups should use a different color nameplate.)

3. Each group of nations will first meet among themselves to develop a preliminary draft. Distribute Handout #2 for students to use as a guide in developing the group's document. The group will use a separate handout for each subject. With one person serving as a recorder, the members will identify the major issues surrounding each subject. For each issue, they will then list the possible problems/disputes that might arise and how that issue might affect their nation. Possible solutions for resolving the issue are then suggested, and in the last column they are to briefly outline a proposed law. The completed worksheet, thus, provides the basic information for formulating their set of laws.

   Although the members may share some common characteristics, it will soon become apparent that their interests often come into conflict. These differences will need to be worked out between the group members before they begin drafting their resolutions. It is important that group members try to reach a consensus so that they function as a unified group when they meet with the total membership. Otherwise, it may be more difficult to achieve the group objectives.

   Two to three class periods should be allocated for this group work. Students should consider carefully the questions found on pages 100, 101 as they develop each resolution.

4. Each group will make two copies of its laws and submit a copy to the other groups. This provides students an opportunity to review the other resolution and be better prepared to raise questions during the presentation.

5. Spokespersons from each group will present the group's resolutions at the general class meeting. It is recommended that each member present a section. The presenters should elaborate on each resolution, explaining their reasons for the proposed ruling. There should be time allotted after each presentation for questions and further clarification of a particular ruling.

6. Following the three group presentations, the small groups will reconvene to discuss the different resolutions. At this time the groups may wish to revise or modify their original resolutions. In addition, the

groups will identify resolutions proposed by the others they find unacceptable. In smaller subcommittees they will hold conferences with members of the other group who proposed the resolution and try to attain a more acceptable resolution. The Law of the Sea Treaty, unlike a law passed by a governing body which all citizens of a nation must abide by, bears greater similarity to a negotiated contract which must be acceptable to all parties involved. To reach a consensus is the challenge that students participating in this simulation must meet. Students will need to address the ideas of tradeoffs, short and long term benefits and perhaps, ideally, the notion of voluntary self-sacrifice among all parties involved.

7. After modifications, revisions and negotiations have been completed, the entire class will again reconvene. At this time a class moderator will call in turn the resolutions developed by each group on each subject. These are to be listed on the chalkboard or large sheets of newsprint. Each resolution will be voted upon in turn and is adopted if *all* members approve. When votes for all the resolutions on each subject have been cast, the conference should carefully review the results to determine if the major issues have been adequately addressed. If not, the students may need to re-negotiate a resolution or change it in such a way that is more acceptable to all the members.

   This process for adopting the Treaty continues until resolutions for all subjects have been voted upon. To simplify the process, resolutions that address the same issue should be grouped together and similar resolutions should be combined. This will reduce the redundancy and time and increase the likelihood that the resolution will be approved.

8. A committee should prepare copies of the final document to be signed by class members. (The class may wish to conduct a treaty ratification ceremony.)

Comments and Suggestions

Debriefing — It is important to set aside some time immediately following the simulation to discuss the activities which occurred, the problems encountered, and the results. As mentioned previously, the debriefing session is often as important as conducting the simulation because it can provide additional insights into the activity. Also, it provides an opportunity to relate what is a seemingly artificial situation to what actually occurs in the real world so that the simulation becomes a more meaningful experience. Some types of questions that might be raised during the debriefing include the following:

- . . . Did each nation feel that it was treated fairly and equitably?
- . . . Were trade-offs frequently employed in order to attain consensus?
- . . . What types of concessions were most difficult to make?
- . . . Did any nation exert its influence unfairly?
- . . . Were there any agreements made that would be difficult to abide by or enforce?
- . . . Did the class disputes or arguments resemble those that took/are taking place at the actual conference?

Modified Procedures — If time does not permit the extensive development of the entire treaty, you may wish to select only some of the subjects to develop. This will also give greater focus on the more controversial topic. In this case, the issues of seabed mining and fishing should be included among those issues selected.

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[1]Garrett Hardin. Tragedy of the Commons. *Science*, 162, 1243-48, 1968.

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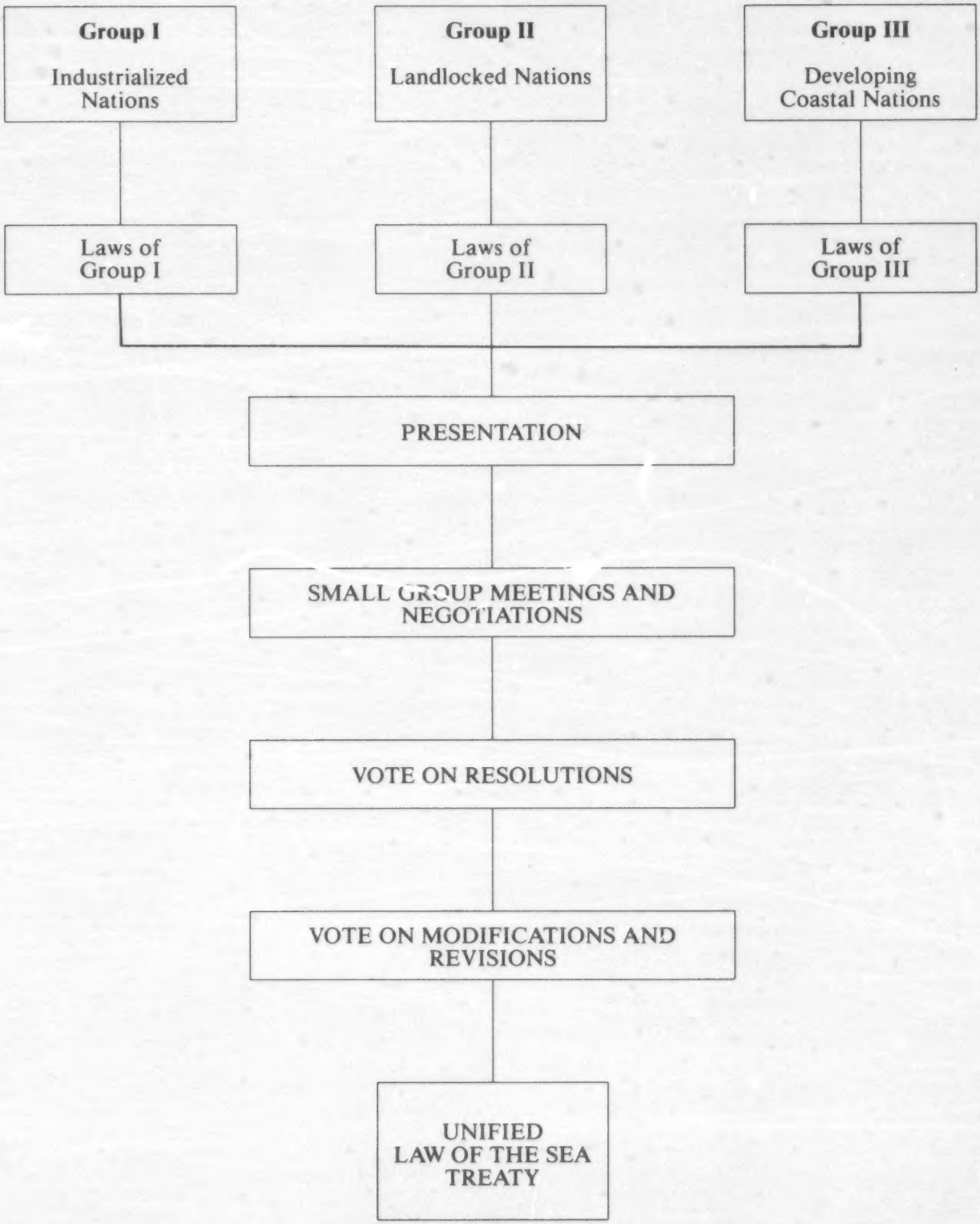
Figure 1.

LAW OF THE SEA CONFERENCE



STUDENT HANDOUT TWO

WORKSHEET FOR DEVELOPING LAWS OF THE SEA

Topic to be addressed: _____
(fishing, marine pollution, etc.)

ISSUE	POSSIBLE PROBLEMS/DISPUTES	HOW YOUR COUNTRY MIGHT BE AFFECTED	POSSIBLE SOLUTIONS	PROPOSED LAW

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The Politics of Wilderness:
Unique Value Conflicts

Daniel H. Henning

Intense controversies over our federal wilderness reveal something of American politics and unique values. Basically, wilderness politics spur severe conflicts of values among individuals and organizations as they try to influence government decisions about establishing wilderness areas. Sometimes, depending upon the parties involved, the intention of lobbying and pressure activity may be to maintain a status quo.

While ambiguity and a confusion of values are pervasive characteristics of our age, a strong sense of values influences the individuals and organizations who engage in the power struggles surrounding wilderness decisions. However, the values of an organization may differ from those of an individual. Indeed, in a practical and symbolic sense an organization has a life of its own. This holds true for the federal agencies that administer our public lands containing wilderness: the U.S. Forest Service, National Park Service, U.S. Fish and Wildlife Service, the Bureau of Land Management. In fact, given their own values and vested interests, we can certainly consider these agencies to be political actors in the wilderness arena.

With the passage of the Wilderness Act of 1964 Congress officially recognized the wilderness concept following eight years of lively debate on some sixty-five bills. Previously the wilderness designation had been a matter of agency and departmental discretion and consequently was of a temporary nature. The provisions of the Act of 1964 were later applied to the Bureau of Land Management under the Federal Land Policy and Management Act of 1976. The 1964 Act states:

> A wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped federal land retaining its primeval character and influence, without permanent improvements or human habitation, and which is protected and managed so as to preserve its natural conditions . . .

Under this act, wilderness on federal public lands has and is being considered under agency-classification studies, with public hearings and inputs, for legal and permanent status through Congress under the National Wilderness System. For example, the second Roadless Area Review Evaluation (RARE II) was recently completed by the Forest Service, along with its recommendations that are now under consideration by Congress.

Primarily controversies are concerned with conflicts based on economic and short-term versus noneconomic and long-term—as well as psychological—considerations. The Wilderness Act of 1964 prohibits motorized equipment and general economic development. This restriction automatically activates opposing forces concerned with various forms of public-land development and motorized recreation. Although grazing and mining (with no new mining claims to be filed after 1983) are permitted in wilderness areas, these sources, particularly mining industries, are generally opposed to the overall effects of the Act.

Wilderness proponents usually hold noneconomic and long-term values, except for the outfitters and packers who derive some immediate economic benefit by equipping or taking parties into wilderness areas. The values advanced by the proponents of wilderness have little or nothing to do with short-term economic benefits. At the same time they point out some economic benefits they confer, such as when they protect a watershed or attract quality recreation and sports enthusiasts to the area.

Yet, a paradox here is that wilderness opponents may sometimes object on the basis of economic-development values that do not provide economic benefits to themselves. We could certainly consider opposition of

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"Many people perceive legal wilderness as a threat of government intervention and control over their self-styled brand of independence and economic orientation."

this nature to be based on ideological grounds, for example, generalizing based on "destroying" the economy and removing jobs by "locking up" public lands from economic development. In this regard, both proponents and opponents may use economic arguments because they find them acceptable to the political process.

Obviously psychological values often underlie economic and, to a degree, noneconomic values of both the proponents and opponents, and these psychological values are very revealing of the American political system and values. As provided in the 1964 Act, the setting aside of public lands in a wild and natural state on a *permanent* basis arouses strong partisan positions. Although Congress has options to change the status of the wilderness areas it has established, it has not done so up to this time.

In contrast to other public-land-management decisions considered to be temporary, wilderness proposals bring to the forefront a variety of considerations. The development of a wilderness area is irreversible. It is permanent. Wilderness is either forever wild or forever lost to development.

Over a ten-year period, my analysis of numerous public hearings on wilderness controversies reveals the definite efforts of proponents to ensure that noneconomic and long-term values will be perpetuated for future generations. On the other hand, the opponents have given emphasis on a short-term basis to values associated with economic development and motorized recreation and resist "locking up" the proposed areas from various uses. The psychological dimensions of present versus future considerations appear to weigh heavily in wilderness politics.

Small-Community Interests

Some proponents have noted that many opponents view wilderness as a threat and suggest that they base their responses initially on this type of concern. Some values may not emerge until an individual or group becomes angry at something negative. For example, a wilderness area near a small community may attract relatively little attention from local citizens over the years. But when this area is proposed for legal wilderness, it suddenly becomes the subject of intense controversy and citizen activity.

In general the majority of people in communities near wilderness habitually oppose the wilderness designation, while much of the support for it comes from large urban areas or nationally. This is naturally complicated by the position of the vested interests associated with small communities. Many people perceive legal wilderness as a threat of government intervention and control over their self-styled brand of independence and economic orientation.

In the small communities near wilderness this strong brand of independence is easily threatened by proposals to make a "government wilderness" out of "our forest," regardless of the restrictions, if any, involving their individual lives. It is not surprising that chambers of commerce or similar economic coalitions in small communities are in many cases among the leading opponents of local wilderness proposals.

Correlated with the threats to independence are the frontier exploitative values that many opponents share. Although the frontier has long since disappeared from the American scene, attitudes associated with unlimited, unrestrained, and irresponsible exploitation still persist. This is true where there is close proximity and heavy utilization of natural resources on abundant public lands. Economic development is viewed for its own sake without aesthetic, ecological, or future concerns. Of course this is in opposition to environmental protection, including wilderness preservation.

Much of the environmental movement of the late 1960s and early 1970s called for a dramatic reversal of frontier exploitative values. Yet in the late 1970s there appears to be a resurgence of frontier thinking, particularly in matters of energy development. The recent recommendations by the Forest Service reveal this trend.

For example, recommendations for wilderness designation in the second Roadless Area Review Evaluation for Montana were given to only 604,000 acres out of 8,600,000 of roadless wild acreage. In similar fashion, nationwide the far greater portion of roadless areas in our national forests is to be "opened up" for various forms of development, necessitating the removal of vast amounts of wilderness.

Certain recommendations of the Forest Service against wilderness can be attributed to the postures of its organization and personnel. A great number of foresters are committed to the utilitarian benefits of logging, mining, grazing, motorized recreation, and the like on a short-term economic basis. Further, their forestry schools and professional and agency indoctrinations give them a timber-management orientation.

Like many agencies, the Forest Service is attuned to business and economic interests through client relationships, including local vested interests. In this sense, as a part of the government the Forest Service simply reflects

the inherently exploitative and economic values of the business culture of the United States. (At the same time, however, we should remember that the idea of wilderness preservation originated with the Forest Service in the 1920s, with Aldo Leopold, Bob Marshall, and others supporting the concept.)

In essence, all public and private organizations and institutions, as well as individuals in America, receive a business indoctrination in varying degrees as participants in a business-oriented culture. Setting land areas apart from economic development permanently can thus be seen as a threat.

Professor William Plank identifies another dimension of the dilemma. Under the capitalistic work ethic, many cannot stand to see an area of wildernes not "used" or developed in some manner. This could go far beyond immediate economic considerations. Given this pragmatic attitude, it would appear that economic resistance toward wilderness is complex.

A 1977 survey of the general public revealed strong support for wilderness protection over economic development. Interestingly, the survey by Opinion Research Corporation was financed by the American Forest Institute, supported by forest-product industries. According to the survey approximately two out of three Americans favored wilderness protection over increased timber production and road expansion.

As a result, Opinion Research Corporation recommended that the forest industries concentrate their attention on political and governmental decision-makers rather than the American public in their future efforts to influence economic development over protection of wilderness. This recommendation indicated that these decision-makers would be much more attuned to economic and political realities than would the general public, whose attitudes were considered to be irrational in wilderness affairs.

On the other hand, the American public and economic development are highly correlated with technological considerations and influences. In "Helios: The Rehabilitation of a God" (unpublished paper), Professor Plank notes:

> Ecologists demand a development of solar energy; they are the same ones who praise the setting aside of wilderness areas. But they themselves are the children of the industrial revolution which has its foot on the neck of nature, and their ability to appreciate unrestrained nature is dependent on the fact that nature is under control of our technology. The romantic appreciation of nature was made possible by the fact that technology killed off most of the monsters that lived there. Those very people who would seem to welcome back a theological myth structure (outdoor and primordial) are enabled to do so because of their existence in an existential myth structure (indoor and technological).

Motors Versus the Horse or Hiker

The impact of technology through motorized recreation has been an important factor in wilderness controversies. With various forms of motorized recreation prohibited in legal wilderness, strong and organized resistance to wilderness proposals from these sources has emerged. Basically the conflict of motorized versus nonmotorized forms of recreation hinges on other conflicts: utilitarian versus aesthetic, quantity versus quality.

The major thrust of this recreational-technological aspect concerns the primary concept of wilderness itself. The very act of pressing for the use of motorized vehicles in wilderness areas implies a lack of recognition and/or opposition to this primary concept.

Motorized recreation has become a paramount interest. In the process, four-wheel drives, snowmobiles, trailbikes, scrabblers, and motorboats become ends as well as means. Without mechanized toys that they regard as an extension of themselves, many people cannot conceive of outings into open spaces. Consequently, motorized recreationists offer a great deal of resistance to wilderness considerations. They often form social or political clubs that serve as highly effective pressure groups.

Vested interests in small communities near wilderness also back the motorized recreationists. Political argument hinges on the point that an area should be used by all the people through motorized recreation rather than only by a minority of affluent people who can afford to enjoy the wilderness on foot or horseback.

Yet many forms of motorized recreation require thousands of dollars for equipment as well as expensive weekend lodgings, in contrast to the relatively smaller costs of a backpack outfit or a good pack horse. Various surveys of wilderness visitors, including those by the U.S. Forest Service, reveal that they represent all walks of life and that their wilderness preference is a function of the individual. Further, the mass, motorized recreational premise of the opponents is geared to the basic American belief in equality in providing motorized access to all.

We see that wilderness opponents tend to appeal to general values associated with our culture, particularly its business and "realistic" aspects. With the resurgence of economic and energy interests over environmental considerations, values of this nature have gained increased emphasis in the antiwilderness sector, and there is resistance to wilderness by interests associated with energy and gas, oil, and energy corridors.

In contrast to this, proponents of wilderness have largely based their efforts on values not in our national mainstream. Pro-wilderness decisions call for recognition of environmental quality, the needs of future generations, and maintenance of nonhuman forms of life—many of which are intangibles—over more pragmatic considerations. Wilderness values for man are numerous but not particularly of a practical nature, for example, stress removal, quality recreation, aesthetic, spiritual, and personal achievement.

The major wilderness value, however, appears to transcend humanity in that it has an ecological orientation: the wilderness provides an undisturbed habitat where animals and plants can live in a natural world without

man-made modifications. Many forms of life cannot survive without wilderness. The arguments for wilderness are often based on the necessity to provide wild habitats for endangered species. As part of the biosphere we obviously have responsibilities.

In consequence, recognition of wilderness-ecological values suggests that plants and animals have "natural rights," which we are to protect through the political process—a unique concept. It also allows us to recognize our responsibility as the dominant animal of the biosphere without measuring other living things in terms of our self-interest; other living things may have a life of their own.

Of course, to set aside "islands of wilderness" amid a human-dominated landscape requires primary recognition of these values. We have seen that the efforts of proponents to promote the values of the wilderness have had to adapt to the complexities of politics.

But even as we watch the growing emphasis on these arguments and the approaches of their proponents to the political process, we can still consider the underlying wilderness values to be of an intangible nature. The surviving, established wilderness indicates that we can reach beyond materialistic dimensions to the intangibles of environmental stewardship. The politics of wilderness may also point to the emergence of changing values that intuitively recognize our ecological and natural heritage.

According to the historian Professor Frederick Jackson Turner, the true American character was formed when early people immigrating here were transformed as they interacted with the wilderness on the frontier. Given our frontier history, our efforts to promote wilderness values in political processes may indeed indicate an intuitive recognition of our national heritage and character. But it may also indicate the intense conflicts between short-term and long-term considerations, economic and non-economic evaluations (including ecological), and materialism and the intangibles in our politics, as illustrated by the severe cutbacks and removals of limited remaining wilderness areas on an irreversible basis. ●

Editorial from RAIN by Bill Press

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● **Study how a society uses its land and you will come to some pretty reliable conclusions as to what its future will be.** —E. F. Schumacher

Our future, based on those criteria, will be—like the land's—an impoverished one. We clearcut our virgin redwoods, allowing irreplaceable topsoil to wash down the hillside and be carried away forever by winter rains. We gouge out the earth to extract coal. We terrace the foothills to release geothermal steam for one quick energy fix. We ignore the contour or character of the land in planning, or planting, most buildings. We pave as much as 60 percent of our cities to accommodate the land-hungry automobile. And, in this sophisticated year of the Lord 1977, we still convert our best croplands and orchards to condominiums.

Why do we so abuse the earth?

One reason, of course, is that there has always been so much land in this country. As noted in Frederick Jackson Turner's seminal essay on the frontier in American history, and further documented in David Potter's classic *People of Plenty*, the restless American pioneer always knew there was another valley, another forest, another meadow just over the horizon. There was little incentive to do otherwise than move in, exhaust the land, and move on. George Washington, himself a farmer and close to the land, gives early evidence of this "frontier mentality" in his letters. "We cut down more wood, if we have any, or move into the western country."

As America moved westward, the General Land Survey set the tone by establishing the rectangular, grid pattern as the basis for dividing frontier lands. The same pattern was applied indiscriminately to most cities: four intersecting straight lines, permitting easy-to-merchandise land parcels, quick sales and limitless expansion onto surrounding agricultural lands.

Another reason is that the great majority of Americans have, by birth or by choice, alienated themselves from the land and sought refuge in the cities, where appreciation of the land can never be the same. Even more unfortunate for this nation, as Wendell Berry movingly relates in *A Hidden Wound*, is the fact that too many of those who stayed behind on the land turned over the thousands of menial tasks by which the land is maintained—and by which we develop a closeness to the land—to people they considered their racial inferiors: black slaves, Chinese laborers, or migrant workers. People who, of course, lacked the means to own the land and thereby earn the only "ticket" required for admission to Western society.

A third reason is that we now have in hand greater tools of destruction than ever before in human history. For the first time our technological capacity for destruction exceeds the land's physical capacity for renewal. Compare the years of primitive manpower that would be required to equal the change to the landscape wrought in one day by one 20th century American on one earthmover. The degree of difference is staggering. I know it is considered heretical among naturalists, but I believe that the easy availability of such tools of destruction—more than any basic philosophical difference—has made contemporary Americans more destructive of the land than their native American predecessors or other "primitive" peoples who are universally praised for their gentle treatment of the good and generous earth.

I believe, with Schumacher, that "before our policies with regard to the land will really be changed, there will have to be a great deal of philosophical, not to say religious, change."

In other words, unless we in this country begin to think of, or deal with, the land as the limited resource it is, we will never develop any closeness to, or respect for, the land. And until that happens, there will be no policy change, and no amount of planning will work.

In short, we need what Aldo Leopold first called a "land ethic" for this nation.

The land ethic is really an extension of the ethics governing our behavior toward our neighbors and toward our communities. The notion of ethics colors humankind's naturally selfish behavior with a touch of respect for other human beings and cooperation as a member of the community. Leopold writes, "The land ethic simply enlarges the boundaries of the community to include soils, waters, plants and animals, or collectively, the land."

Don't think that the land ethic is too esoteric or too complex for decision-makers today to deal with. In fact, the best expression of the land ethic in this country is also the most simply stated. It was adopted by the Humboldt County, California, Board of Supervisors in August 1972: "We, the people of the County of Humboldt, recognize and acknowledge our total dependence upon the land and accept our obligation to use the land in a manner which will sustain and benefit man and all other living things." Not a bad beginning—nor end!

Last year, the Office of Planning and Research assembled 150 land managers—developers, farmers, realtors, elected officials, environmentalists, state and federal bureaucrats—to discuss the wisdom of a land ethic for California. The conclusions of their two-day deliberations reflected an amazing consensus: "This is the land ethic. First, the land is the basis of all life. Second, that land is a very valuable, a very limited and an irreplaceable resource. Third, that we as temporary stewards on the land have a responsibility to care for the land, to nurture it, and to turn it over to those who follow us in better condition than we found it."

One further example, lest I appear too radical. The *Code of Ethics* of the National Association of Realtors begins: "Under all is the land. Upon its wise utilization and widely allocated ownership depend the survival and growth of free institutions and of our civilization."

The land ethic, then, is one of *reverence*, *respect* and *responsibility*.

Reverence: for the life-giving, almost divine nature of the earth; its beauty, its bounty, its mystery, its blessings, its unique role in the well-being and survival of all living things. It is no surprise that the most common trait of all primitive peoples is worship of the earth.

Respect: a healthy respect for the ability of the earth, properly cared for, to sustain a nation for centuries; or, neglected or abused, to topple an entire civilization in decades. The barren rim of the Mediterranean is stark proof that proper or improper use of the land is one of the most powerful forces shaping history. Carter and Dale's *Topsoil and Civilization* should be required reading for every elected official, if not every landowner.

Responsibility: for the tremendous heritage that is ours, over which we exercise temporary stewardship, making the daily decisions—in our private lives and in our public institutions—that will determine what shape the land will be in for generations that follow.

It is difficult to define a land ethic. It is more difficult to put it into practice. I believe we must do both and change our attitudes toward the land from one of ignorance and abuse to one of care and kindly use. The health of the people and the land, our two greatest resources, depend on it.

—Bill Press

Bill Press is a person whose head is in the right place. As director of the Office of Planning and Research in the Governor's Office, he can be counted on to push good ideas and programs. —*LdeM*

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MICKEY MOUSE IN THE MOUNTAINS

The folks who brought you Disneyland yearn to turn California's Mineral King valley into a mammoth ski resort

by Peter Browning

MINERAL KING VALLEY in the southern Sierra Nevada epitomizes the conflict involving conservationists, private industry, and government. Despite what seem to be similar ideas as to how nature should be treated, a bitter controversy has arisen over the future of the valley. Walt Disney Productions proposes to build a $35 million ski and tourist resort at Mineral King, an approach to conservation enthusiastically supported by the U.S. Forest Service, which administers the valley. The major opponent of the development is the Sierra Club, the nation's most prominent conservation group. The Club is certain that such a development would ruin the valley.

The controversy has been intensifying for almost seven years, replete with all the tactics and strategies that customarily attend such matters: claims, charges, counterclaims, objections, and a "class action" suit. The suit was filed in U.S. District Court by the Sierra Club, passed through a Federal Appeals Court, and is now on appeal to the Supreme Court. The Court heard oral arguments in the case last November and is expected to make a ruling early this year.

The ruling may well be a landmark. It could determine whether conservation groups and other citizens' organizations, even though not directly involved, are eligible to challenge the vast range of federal policies and actions affecting the environment. Laws protecting the environment are often inadequate or are not enforced. If judicial challenges to the decisions of federal agencies and officials are unsuccessful—or are not even permitted—then the conservationists will have nowhere to turn, and the great ado will have been meaningless.

Underlying the Mineral King controversy, and others like it, are the loud, angry, emotional differences over which should come first, environment or the economy. Those concerned on both sides of the issue use identical arguments to support their positions: We are doing this because we think it right and beneficial, because we think our actions will benefit our society and enhance the quality of life for all classes of people. But only in their statements of intent and professions of altruism do the two sides agree.

In truth, there is neither common cause, nor common ground, nor—if we hear correctly—even common understanding. Three organizations, all acting with benign intent, daily use the word "conservation" to describe radically different concepts. When the Forest Service uses the word it means utilizing the public land, in a variety of ways, to produce revenue. Disney Productions takes the word to describe a particular type of investment opportunity—building a resort and recreation center, on free land, in an area of great natural beauty. The Sierra Club uses the word to mean just leave well enough alone.

None of these is a pure attitude; all have evolved from simpler notions, from a time when questions were easy and answers obvious. For Disney it may seem like a giant step from the first simple animated cartoons to the construction of a huge tourist resort, but it is hardly a step at all. Rather it has been a natural linear progression: from cartoons to "live" films; thence to the imitation of life *cum* amusement park at Disneyland; from there to the imitation more real than reality, the new, self-contained Disney World in Florida, a Tomorrowland with a vengeance; and, thrown in for good measure, the planned resort at Mineral King. All of these activities are essentially the same: the packaging and marketing of mass entertainment, the manipulation of large numbers of people who have become adapted to passive pleasures and who expect the utmost in comfort. The Forest Service understands Disney's forte quite well: "Walt Disney Productions has established a mastery in the area of 'people management.'"

The Forest Service itself has evolved from the protector of the nation's forests from exploitation to become an apparent ally and protector of the exploiters. (Or, as in the case of Mineral King, the instigator of exploitation—the government agency that begs private developers to take over public land.) It is a familiar metamorphosis, one achieved by various federal regulatory agencies that have become the servants of those they are supposed to regulate.

The Sierra Club, too, has changed. In 1948 it viewed Mineral King as an area with high potential for ski development. In 1953 it was not opposed to making the area more accessible, and a policy favoring modest development still prevailed in the mid-Sixties. But by June 1969 the scope and crushing impact of the proposed Disney development had become apparent, and the Sierra Club modified its position. It filed the suit that has, thus far, prevented any development. And now, as the best way both to realize Mineral King's recreational potential and to protect its natural state, the Club proposes adding it to Sequoia National Park.

Pristine state

MINERAL KING IS a rather small area to have generated such strong passions. The valley floor, at an altitude of 7,800 feet, is two miles long and a quarter-mile wide, an area of about 300 acres. The larger Mineral King basin, bordered on three sides by Sequoia National Park, comprises 15,000 acres (approximately twenty-four square miles). It is an oval-shaped basin, rimmed by eleven- and twelve-thousand-foot peaks, with half a dozen hanging valleys separated by narrow ridges. The basin is geologically young, with unstable, precipitous slopes still being formed by shifting stream beds, rock slides, and avalanches. There are about twenty-five summer cabins in the valley, but little else to show that it has been inhabited for more than one hundred years. Most of the terrain above the valley floor is in a pristine state, much as it was when the glaciers melted.

This fortunate state of affairs is not the result of the prescience and determination of any individual or organization. It is simply because the only access to Mineral King is via a narrow, steep, winding road—the last third of its twenty-five miles unpaved. Mineral King is only 228 miles from Los Angeles, 271 miles from San Francisco, and 55 miles from Visalia, the nearest large city in the Central Valley. That it has not long ago been overrun by people is due to a combination of topography and historical circumstance.

Mineral King was first visited by white men in the late 1850s. The valley was mistakenly thought to have rich mineral deposits, and during the Seventies and Eighties there was a modest, short-lived silver rush. When Sequoia National Park was created in 1890, Mineral King, which is topographically and ecologically a natural part of the park, was not included because of a few remaining mining interests—a condition considered incompatible with national park standards. Even though all mining ceased long ago, and the few buildings associated with the mining have disappeared, the anachronistic attitude still prevails. The 15,000 acres generally referred to as Mineral King became part of Sequoia National Forest, and in 1926 the area was designated as the Sequoia National Game Refuge.

In 1949 the Forest Service issued a prospectus inviting bids from private concerns to develop Mineral King as a winter sports resort. There was considerable interest, but no bids were made. The stickler was that inadequate county road. There were no state or federal funds available for a new road, and none of the interested private developers was willing to spend the millions of dollars needed to build a twenty-five-mile all-weather road in mountainous terrain.

Despite the inability of the Forest Service to find a bidder in 1949, the pressure was on and could only grow as affluence and leisure time increased. In February 1965 the Forest Service issued a new prospectus, outlining a development conservatively estimated to cost three million dollars—not including the expense of building a new access road. The road is the key to Mineral King; without it there can be no development.

The Forest Service received six bids that met the minimum qualifications. On July 16, 1965, while the Service was still considering the bids, the Mineral King road was suddenly added to the state highway system. No legislative hearings were held. Even more peculiar was the fact that no one seemed to be considering a critical aspect of the proposed new road: the only feasible route to Mineral King is roughly parallel to the existing road, which means crossing approximately nine miles of Sequoia National Park. But in 1916 Congress prohibited any use of the national parks that does not conform to the fundamental purpose of conserving natural and historic objects and the scenery. The proposed new road has but a single purpose: to connect a point on one side of the national park with a commercial enterprise on the other side. It is patently not meant to serve the park nor to do anything other than benefit a private concern.

In December 1965 the Forest Service accepted the proposal of Disney Productions for a $35 million development. Disney was issued a three-year development permit, authorizing the company to make surveys and plans.

Secretary of the Interior Stewart Udall was strongly opposed to the Mineral King project, and at one time it seemed that his view would prevail. On December 2, 1967, an exchange of letters over Mineral King between Udall and Secretary of Agriculture Orville Freeman was made public. The two were in sharp disagreement. (The Forest Service is in the Department of Agriculture, and the Park Service is in Interior. The two services have a long history of rancorous dissension.) Udall wrote:

> *I am honestly worried by the thought that we will not be honored twenty-five years from now if we make a decision to violate this valley by a road.*

He also suggested establishing a special committee to study the matter. The idea was rejected by Freeman, who wrote:

> *This is out of the question. There have been long months of indecision and delay already. This administration, through my personal action, is committed to development of Mineral King.*

On December 27, Udall's resistance finally vanished. He said he had held out as long as possible by himself, but that now he would "reluctantly" approve the road.

Mr. Udall, in a letter to this writer, said, "I was flatly opposed to the development and the road, and held up the project for nearly two years singlehandedly." He also said that Secretary Freeman "threatened to take the issue to the President and get him to overrule me. The Bureau of the Budget people at the highest level intervened and suggested that objections were, in effect, overruled by the Bureau of the Budget."

That was that. If the road could be built, then the primary obstacle in the way of development was removed.

Alpine "Americanized"

ON JANUARY 21, 1969, with neither public notice nor opportunity for review, the Forest Service accepted Disney's master plan for the development of Mineral King. But the thirty-year development permit was not issued, because one of the necessary conditions had not been met: the first contract for construction of the road had not been awarded. Before that occurred, the Sierra Club, on June 5, 1969, filed suit in U.S. District Court in San Francisco, seeking preliminary and permanent injunctions against the project.

One part of the Sierra Club suit was directed at the Forest Service and the Secretary of Agriculture. Congress has set 80 acres as the maximum size for resorts developed under lease on national forest land. But the Forest Service, after granting Disney a thirty-year lease on 80 acres, also granted year-to-year leases on 300 acres more. This is land that would be permanently altered by the construction of the village and its associated facilities. Most of the remainder of the Sequoia National Game Refuge—some 13,000 acres—although not under lease to Disney, would be affected by construction of gondolas, chair lifts, and ski runs. The lawsuit charged that the lease arrangement "is a clear and patent effort to circumvent the 80-acre limitation." The suit also charged that the proposed use of the valley by Disney is a violation of its status as a national game refuge and that the Forest Service violated its own rules in failing to hold public hearings on whether Mineral King should be developed.

A second set of charges was directed at the Park Service and the Secretary of the Interior: that the proposed highway across a portion of Sequoia National Park does not serve a park purpose and is therefore prohibited by law; that the Park Service violated federal regulations that require a public hearing on both route and design of roads in national parks; and that Congress alone (and not the Secretary of the Interior) may authorize construction of a transmission line within a national park.

On July 23, 1969, District Court Judge William T. Sweigert issued a preliminary injunction that is still in effect. Judge Sweigert said he was not concerned with the controversy between so-called progressives and so-called conservationists; he thought the legal questions raised by the Sierra Club were sufficiently substantial and se.i-

ous to deserve being tried on their merits. Even more important, Judge Sweigert rejected the government's contention that the Sierra Club had no right to sue on behalf of the public because it did not have any "private, substantive, legally protected interest" in Mineral King.

The government appealed. On September 17, 1970, a Federal appeals court, by a 2-to-1 vote, overturned the injunction, ruling that the Sierra Club had no legal standing by which to contest actions of the federal officials who approved the Mineral King development. The decision came as a great shock to conservationists, inasmuch as the U.S. Court of Appeals for the Second Circuit in New York had declared such a right in the Scenic Hudson Preservation Conference's suit opposing the Storm King power project in New York, and again in a suit against the proposed Hudson Expressway. The appeals judges also ruled, unanimously, that the Sierra Club's argument against the project was so weak that Judge Sweigert had erred by issuing the injunction.

In its appeal to the Supreme Court, the Sierra Club noted that "the issue here is not a choice between the Sierra Club and a more appropriate plaintiff but between the Sierra Club and nobody." The government argument, in effect, is that *no one* may object to the Mineral King development because no one is economically affected and therefore no one has legal standing.

THE FOREST SERVICE PROSPECTUS of 1965 called for a development costing $3 million. The facilities were to include lifts or tramways with a capacity of 2,000 people per hour; parking for 1,700 automobiles; overnight accommodations for 100 people; plus the necessary supply, sanitation, and maintenance structures. Four years later the Forest Service approved a development costing ten times as much—one that would crowd as many as 14,000 people at a time into a very small valley. (The original Disney proposal estimated there would be two and a half million visitors annually. Later the figure was reduced to 1.7 million. The current estimate is 980,000. The reasons for these reductions are obscure. One apparently is that the Forest Service plans to eliminate all camping in the valley. Another may be that they are intended to quell the objections of conservationists.)

The scope of the development is overwhelming. Disney plans an "American Alpine" village. At the end of the new road there will be an eight- to ten-story parking structure for 3,600 vehicles. Nearby will be food storage and preparation areas, and accommodations for nearly 1,000 employees. There will also be a hospital, heliport, wardrobe department, administration offices, and a service station. From this point visitors will travel two and a half miles on "colorful excursion trains" to the village proper, which will have restaurants, boutiques, a 1,030-room hotel complex providing lodging for 3,310 people, a convention center, a theater, an equestrian center, indoor and outdoor swimming pools, and an ice-skating rink. And there are going to be twenty-two to twenty-seven ski lifts.

The late Walt Disney said: "Mineral King's great natural beauty must be preserved at all costs." Disney Productions' proposal states:

> *Grooming and manicuring of most slopes without destroying the naturalness of the area particularly for intermediates, will require extensive bulldozing and blasting in most lower areas and extensive rock removal at higher elevations.*

What a strange "naturalness."

There was once a small general store at Mineral King, but it's gone now. There is no café; you bring your food with you. But the collection of restaurants Disney plans to build is stunning. In the first year of operation there will be nine food-service facilities seating 1,300 people. They are designed to cater to all tastes and degrees of affluence: snack bars and coffee shops, "buffeterias," a "teen center," and a "gourmet restaurant" atop a village hotel. By the fifth year, there will be thirteen facilities seating 2,350 people. Among these will be a 150-seat sandwich shop at the Midway Gondola Terminal on Miner's Ridge at an altitude of 9,200 feet—1,400 feet above the valley floor. At the end of the gondola line, a place called Eagle's Crest, will be a 150-seat coffee shop located in the "enclosed lift terminal." This is only a few yards from the national park boundary, at an elevation of 11,090 feet.

Can anyone still remember that this is a national game refuge? The Forest Service has largely ignored the possibility of damage to the natural flora and fauna, or has assumed that conflict between humans and animals will be resolved when the animals leave the area because their habitat has been destroyed. The Forest Service has never conducted a biological survey of the area: no studies of the deer or their need for a summer range, even though the valley floor has the best forage in the entire game refuge; no studies of the impact on plant life, not even of the effects of heavy foot and horse traffic.

This is not because the Forest Service is a blundering, inefficient bureaucracy, or because decisions have been made by stupid or venal men. The assumptions of the Service guarantee that decisions favorable to development will be made. If you assume that development is in the public interest, and that the bigger the development the better, then the only studies you make will be concerned with *how* to develop. The logical prior question of *whether* to develop will never even be raised.

There have been some doubts and opposition even within the Service. A memorandum from

the Range and Wildlife Management Section in 1967 states:

> *The total basic concept of development appears badly biased in orientation toward a highly artificial, continued situation, without any real attention to ecological factors. . . . Specifically, stream diversions and channel treatment, flood and debris control, surface water supply development, and sewage disposal proposals are all of a nature we find severely damaging or unacceptable. It is recognized that development of high intensity year-round recreational use in this restricted sub-alpine area is bound to result in pronounced impacts and certain unavoidable changes.*

Yet in a publicity release, "Background Material: Basis for Master Plan Approval," the Forest Service says that "none of the development planned for Mineral King shall have adverse effect on native animal life now in the valley." Later the release observes that "lifts, trails, and conducted tours will make a wide variety of plants available for study in their natural situations." But how can that be? The "natural situations" will no longer exist. On the very next page one reads:

> *Areas of concentrated human use will need to be developed to resist human abrasion and erosion, as well as to provide for visitor comfort and safety. Heavily used trails, paths, and concentration areas will need to be specially developed to protect the associated natural values.*

What those sentences appear to say, while trying to seem as though they're not saying it, is that so many people will be brought into the valley that the vegetation will be trampled to death, and that to protect the vegetation the ground will have to be paved.

Ten tons of trash

THE BEST-KNOWN GUIDEBOOK to the Sierra Nevada, one that was published in 1934 and is frequently updated, is *Starr's Guide to the John Muir Trail and the High Sierra.* In the introduction to his guidebook Starr wrote:

> *Because of the vastness and roughness of this high mountain region, I do not believe there is any danger of having it overrun and spoiled.*

That was written less than forty years ago; as prophecy it could not have been more wrong. Today in the High Sierra there are many places where, in July and August, you meet people at every bend in the trail. The more popular trails have been ground to powder by horses and mules. A ranger at Tuolumne Meadows in Yosemite National Park told me a few years ago that, on an average August day, there were 4,000 people

"In a world turned strangely upside-down, it has come to seem that nature itself is not natural, that it is an inadequate order of things."

on the 190 miles of the Muir Trail between there and Mt. Whitney—and it grows worse every year. Sequoia and Kings Canyon National Parks put out a two-page sheet listing fifty-seven lakes, basins, meadows, creeks, and valleys that have become "problem areas" because of overuse by campers and stock parties.

Mineral King is represented—by all concerned but for differing reasons—as being remote and little frequented. But there *is* a road, no matter that it is narrow and winding, that is traveled by several thousand cars during the five months of the year it is free of snow. Twenty-four thousand people visited Mineral King in 1968. The Park Service sheet says of lakes within ten miles of the valley that they "receive heavy backpacker use from Mineral King." If the number of people reaching Mineral King increases fortyfold, the number getting into the back country might increase by an even greater factor. At Mineral King the situation would be aggravated by the existence of chair lifts, some of which would go all the way to the ridge at the boundary of the national park. There are literally thousands of people who wouldn't think of hiking five or six strenuous miles entailing an altitude gain of 3,000 feet, but who would gladly pay several dollars to ride a chair lift or gondola.

In the mountains, as everywhere else in the United States, trash removal and litter are problems. In 1965, in the area of Big Five Lakes (in Sequoia National Park, about five miles northeast of Mineral King), the Park Service collected ten tons of trash—this at an altitude of 10,000 feet. Already in August 1970 it looked as if the Park Service could have gathered another ten tons. The problem will become insuperable if the area can be reached by an easy hike after riding a chair lift to the ridge. Radically increasing the number of people entering Mineral King will destroy, beyond repair or redemption, the natural environment not only of the valley itself but also of the adjacent portions of the national park.

In Yosemite valley, 150 miles north of Mineral King, the Park Service is making a valiant effort to correct past errors. Yosemite has been plagued by smog, crime, noise pollution, and trouble with sewage disposal. The number of campsites has been reduced by half, and there will be no further increase in overnight accommodations.

Mineral King presents much the same situation as Yosemite valley, except that Yosemite is several times as large. Yet the peak daily use projected for Mineral King would produce three times the concentration of people found at Yosemite on busy days—concentrations that have nearly overwhelmed Yosemite in recent years. The Forest Service and Disney Productions seem not to have heard of the problems encountered elsewhere. Because of the economics involved, they wish to have a population density exceeding that of most urban centers. Indeed, they want to create a small vacation city, complete with all the shops, entertainments, and facilities needed to attract a clientele with time on its hands and money to spend. If Disney Productions were obliged to rely on revenues from skiing alone, it would probably find the game not worth the candle.

Disney estimates that 60 per cent of the visitors to Mineral King will come in the summer. Many of them will make the trip simply because it is there to be made; it will be a nice one-day jaunt. But many would *not* make the drive if there were nothing at the end of the road—such as an excursion train, cafeterias, shops, and an audio-visual presentation to provide entertainment. It's like the story about a tourist who, after gazing at the Grand Canyon for thirty seconds, says, "It's great, but what do you *do* here?" The Disney development itself would be the major attraction at Mineral King. For all that some visitors might care about the surroundings, it could just as well be located in the Mojave Desert or Los Angeles.

American mores—or perhaps American mythology—demand that land be used, that undeveloped land is wasted; that, all men being equal, all are entitled to use the public land; and that all *types* of use are equally valid. If Disney were to build a thirty-lane bowling alley in the center of Mineral King valley, the lanes would soon be in constant use. Disney could then counter all objections by pointing out that, obviously, bowling was what people wanted and their needs had been met. That may sound farfetched, but it is the sort of specious argument used to justify grandiose development at Mineral King. Southern Californians don't have enough nearby areas for skiing: therefore they "demand" more ski resorts, as though the deficiencies of the Southern California climate must be overcome by gigantic engineering and construction projects, done at exorbitant cost and great damage to the landscape. It is the sort of demand that increases without end.

Indeed, the Disney project is open-ended. The Forest Service, in its prospectus, established *minimum* requirements for the development of Mineral King, but there are no upper limits on what may be done. The Service says it will consider the merits of each request for increased facilities. But if the existing facilities are overtaxed, Disney will simply be able to claim that the public "demands" further development. Since there is no stated limit, if Disney insists more facilities are needed to serve the public and turn a profit, the Forest Service will be unable to deny the requests. Walt Disney himself said that "our efforts now and in the future will be dedicated to making Mineral King grow to meet the ever-increasing public need. I guess you might say that it won't ever be finished."

Home truths

THE FATE OF MINERAL KING is still unknown. But even should the courts eventually decide in favor of the Sierra Club, there is a larger issue that must be resolved: have we not reached the point, in certain places in the United States, where we must desist from *any* further development? Has not the ethic of "progress" through engineering and construction been thoroughly discredited? Can we expect to gain anything from another resort complex in the Sierra Nevada that is remotely comparable to what we shall lose?

There is a reality to the Sierra Nevada, hard facts and home truths that must be recognized and dealt with. It is finite; it is irreplaceable; it is under tremendous pressure from a large, recreation-oriented population; and, despite its seeming strength and ruggedness, it is being overused and severely damaged. Even if no more access roads are built into the Sierra, no more ski resorts constructed, it may soon become necessary to limit the number of people admitted to the mountains at one time. Last summer the Forest Service began requiring permits for all those who enter California Wilderness Areas. A permit can be had for the asking—no one will be turned down. But it is a harbinger of things to come. Rationing of the wilderness is in the offing; it seems there is no way to avoid it.

The National Environmental Policy Act, which became law on January 1, 1970, states that its first goal is to "fulfill the responsibilities of each generation as trustees of the environment for succeeding generations." In order to do that, we need to have a better idea than we now have of what those responsibilities are, so that we may be loyal to that idea and thus serve future generations.

Basic conservation consists merely in not doing anything overt: don't build roads, don't chop down trees, don't erect dams. The most harmful fallacy is that we can have our cake and eat it too—that we can retain the wilderness and at the same time develop it. How is it possible to have a "wilderness experience" when the wilderness has been effectively abolished? At Mineral King, even the distant view will no longer be of a natural scene; the slopes will be scarred by ski runs, chair lifts, and steel towers.

It was once the common wisdom in this country—and is still the common assumption—that we have space and time enough to satisfy all our desires. But the space is disappearing, and time runs away. If we are to salvage even a modicum of the beauty that was, then we must commit no more acts of desecration against nature. There is not even the time or space remaining to make experiments: to try controlled admissions or to settle for a lesser complex in Mineral King, as though disposition of the remaining wilderness were a matter of democratic compromise. There is evidence enough at hand to make us want to stop—forever—further destruction of the Sierra Nevada.

For most Americans, roads, automobiles, and all their attendant paraphernalia are natural; it is difficult to believe they have not always existed. They constitute a familiar, secure environment. And in a world strangely turned upside down, it has come to seem to most people that nature itself is not natural, that it is an inadequate order of things, a botched job—and it needs to be fixed, to be "developed" so as to conform to what is familiar to urban people.

Stewart Udall was right: if Mineral King is violated by a road, we—all of us—undoubtedly will not be honored twenty-five years from now. But fifty years from now—and beyond—it might not strike the Americans of that time in the same way. If the history of the twentieth century has taught us anything, it is that men seem to be infinitely adaptable, eternally capable of accepting the prevailing circumstances as natural. If all one has ever known about Mineral King is that a huge resort covers the valley, well then, isn't that just the way it is? Twenty-five years from now there will still be many people who remember Mineral King as it once was, before development. Those who care will lament an irretrievable loss, but lamentation will be all that is left to them. As for the others, they will neither know nor care.

The defenders of Mineral King may prophesy a "breaking point" or "point of no return," a point beyond which a certain mountain valley was lost forever to the developers. If they are right, if it comes, it will be as bad as they foresaw—but it will not be the end of the world. It will be absorbed, and become part of the new reality. Yesterday's predicted horror is tomorrow's bland normality.

In T. S. Eliot's *The Cocktail Party*, Reilly says:

Half of the harm that is done in this world
Is due to people who want to feel important.
They don't mean to do harm—but the harm
does not interest them.
Or they do not see it, or they justify it
Because they are absorbed in the endless
struggle
To think well of themselves.

Perhaps nothing can save Mineral King but a miracle: a radical change of heart by the American people. We need to be able to forgo the economic benefits, the all-weather road, the big hotel, the fancy shops, the swank eateries. Just leave well enough alone. The way to preserve Mineral King is to preserve it—*not* develop it. If we do that we will have good reason—and so will the succeeding generations—to feel important and think well of ourselves. □

Commentary . . .

by Peter Browning

In our March issue, Peter Browning analyzed ("Mickey Mouse in the Mountains") the famous environmental case of California's Mineral King valley, where the Sierra Club had challenged the right of Disney Productions to build a huge commercial ski resort on national parkland. Now that the U.S. Supreme Court has temporarily ruled against the Sierra Club, Mr. Browning offers these comments.

ON APRIL 19, by a four-to-three vote, the Supreme Court held that the Sierra Club did not have legal standing to sue government agencies and officers on their decision to permit the Disney development in Mineral King. The lineup was something of a surprise. Justice Thurgood Marshall, usually counted among the Court's liberals, joined with Chief Justice Warren E. Burger and Justices Potter Stewart and Byron White to uphold the government. Justice Harry Blackmun, considered a conservative, sided with Justices William O. Douglas and William Brennan in dissent.

The decision seemed to be a step backward, a setback for public-interest groups in the increasing controversy over "class action" lawsuits. The Supreme Court has handed down relatively few decisions on the issue, but in those it has generally broadened the scope of legal standing. The Mineral King opinion runs counter to this trend, and in particular to decisions made in New York by the U.S. Court of Appeals for the Second Circuit, in the Hudson River Expressway and Storm King Mountain cases.

The decision was based on a narrow procedural issue: that the Sierra Club had failed to allege that it or its members would be directly affected by the Disney development. The Court noted that earlier decisions had established the principle that an alleged injury may reflect aesthetic, conservational, and recreational values as well as economic ones. But the decision then stated that broadening the categories of alleged injury was a "different matter from abandoning the requirement that the party seeking review must have himself suffered an injury."

This is an extremely fine point—so fine that it almost vanishes. Michael McCloskey, executive director of the Sierra Club, expressed disappointment that the Supreme Court failed to affirm the evolving concept that private citizens may go to court on the same basis as an attorney general to seek enforcement of laws and to challenge decisions of public officials. "Rather than showing that we were individually and personally injured," McCloskey said, "we were trying to show that the public was being injured."

Although the Court ruled the Sierra Club did not have standing, it virtually invited the Club to amend its complaint, to specify that it or its members would be injured by the development. In a clumsy way, moreover, the ruling serves one highly useful purpose: it points up the fact that almost nowhere—not in the Constitution, not in our federal statutes—is there recognition of the public's right to a decent environment.

Senators Philip Hart of Michigan and George McGovern of South Dakota have sponsored a bill (S. 1032, the Environmental Protection Act) that would resolve the question of legal standing by establishing "the right of all citizens to the protection, preservation, and enhancement of the environment." The bill would permit any person to sue to enforce that right. Thus individuals and conservation groups could challenge the acts and decisions of those agencies and officials responsible for managing our natural resources. The Administration's main objection to the bill is that it gives the judiciary a voice in decisions that are now reserved to government agencies—which is precisely its intent. Should it pass, it would provide a measure of real power to all the people: power to protect the environment from economic pressure and harmful decisions by the state and federal bureaucracies.

JUSTICE BLACKMUN, in his dissenting opinion, noted that the issues raised by the Sierra Club's suit were substantial and deserved resolution. More importantly, he stated that the case was not an ordinary one, that it assayed new ground and posed significant questions about the problems of a deteriorating environment and the resulting ecological disturbances. "Must our law be so rigid and our procedural concepts so inflexible," Justice Blackmun wrote, "that we render ourselves helpless when the existing methods and the traditional concepts do not quite fit and do not prove to be entirely adequate for new issues?"

Justice Blackmun suggested two alternatives. The first would be the simple one of granting the Sierra Club standing, on the condition that the Club amend its complaint to meet the Court's specifications for standing. The second would be more progressive and far-reaching: an expansion of the traditional concepts of standing, to permit organizations such as the Sierra Club to litigate environmental issues.

Justice Douglas, certainly one of the better known conservationists in the country, advanced a more novel concept. He wrote that environmental issues should be litigated "in the name of the inanimate object about to be despoiled, defaced, or invaded by roads and bulldozers and where injury is the subject of public outrage." That is, legal standing should be conferred upon natural objects and locales to sue for their own preservation.

This may strike some as a radical leap into a peculiar judicial future, but it is not a break with tradition or accepted practice. Rather it is a broader application of existing concepts, which would bring more environmental issues properly before the courts. Corporations have legal personalities in corporate law, as have ships in maritime law. To extend this concept in the manner suggested by Justice Douglas is radical only in that it grants to nature the rights we have already conferred upon man-made objects and entities. Indeed, giving the natural world equal status with our own inventions might bespeak a true concern for our environment and our future. The Sierra Club has raised the question of who shall be permitted to speak for the values of nature, and the Supreme Court has replied: no one—unless he can demonstrate that he personally will suffer direct and immediate harm.

Perhaps in our future social organization we will contrive a comprehensive land-use ethic, so that we may protect ourselves, and nature, from ourselves. Unfortunately, the notion that certain areas, certain types of land, should be reserved for specific purposes and not be permitted to succumb to economic pressure is anathema to the American mind. The prevailing attitude is exemplified by a letter to the editor of *Harper's* in response to my article. It was from Thomas Sowell, a professor of economics. He wrote:

> *Mineral King is like all other economic resources: it is desired by different people for different purposes and there is not enough for everyone to have all he wants. This problem is dealt with every day by having different groups bid against each other . . . It is obvious that these bids are based on—and thereby represent—the individual demands of thousands of potential customers for each of the alternative services that can be provided by the area.*

If all that we see at Mineral King is another economic resource, and if its disposition is to be in accord with the demands of potential customers, then we are finished. For too long we have codified economic greed as though it were natural law. Justice Douglas's proposal would do much to redress the imbalance and give us some hope of saving the remaining small portions of our wilderness before they are destroyed or metamorphosed into imitations of our cities.

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APPENDIX

"The Politics of Wilderness: Unique Value Conflicts," by Daniel H. Henning, *THE HUMANIST*

Editorial from *RAIN* by Bill Press

"Mickey Mouse in the Mountains," by Peter Browning, *HARPER'S MAGAZINE*

Commentary by Peter Browning, *HARPER'S MAGAZINE*

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